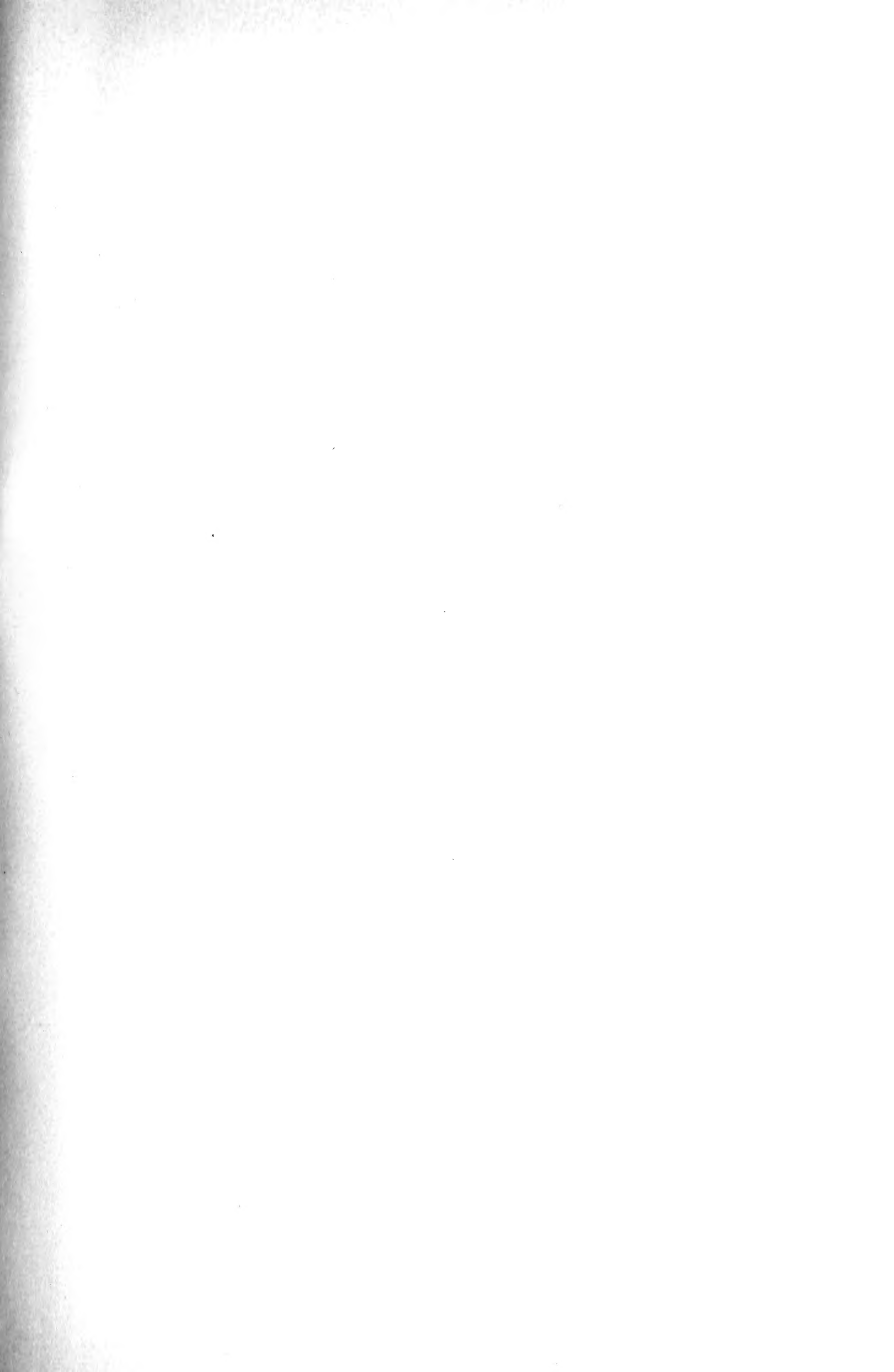


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Species Accounts

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1930-1936

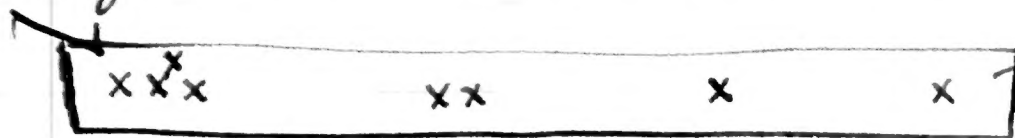
E. L. Sumner, Jr.

Carpodacus mexicanus frontatus 1.

April 8, 1932 - Alpine Creek Ranch (Ralph Estate),
San Mateo Co., Calif. Bunkhouse.

A linnnet has just started to build
a nest behind the half open screen of
the kitchen window; the screen makes the
front, the sill the support, and the
window the back. Whether or not
the bird has already decided upon
the ultimate location of the nest
upon the sill I don't know. Perhaps
she is merely responding, at this
initial stage, to the whole shelf,
when she brings nest material -
or perhaps she does know where she
is going to place the nest but is
chopping the materials on the
sill at the most convenient place.
At any rate, materials are scattered
the whole length of the sill as follows:

point of entrance? I'm not sure about this



future loc. of nest

the materials are bits of lichen, of
the sort that commonly drapes the
black oaks in this vicinity

April 9. 8:45 AM

point of entrance



future loc. of nest

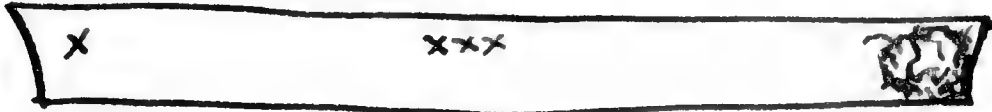


Carpodacus mexicanus frontalis =.

1:46 (Apr 9). Building has proceeded again:



April 11
2 P.M.



April 13
2 P.M.



nest has taken definite shape,

but there is as yet no lining, the wood of the sill showing through at the bottom. Grass, string, and weed stalks compose the walls.

April 15

~~Two eggs present.~~ ^{apparently} Nest completed. So far I have never seen the bird on the nest; she did not roost there at night, either. The lining is of fine twigs and dry grasses.



a single dry black oak leaf

April 20. Two eggs present; the legs have now been incorporated into the nest structure. ♀ still not present.

April 22. Faint eggs; ♀ sitting; flew as I entered the room, using this point of exit ~~point of exit~~

Where she enters I don't really know never having observed her come to the

Carpodacus mexicanus frontatus

3.

nest.

Dec 29, 1932 Linnets get sunflower seeds just as do other birds (*Agelaius* 14, *Cyanocitta* 3, *Pipilo maculatus* 6, *Zonotrichia* 1).

June 20, 1933 A ♀ Linnet has been gathering nest material from last year's dried, scarlet runner bean stems which drape the top of the quail enclosure. Her mate follows her (at least he does part of the time) but does none of the gathering, merely standing around waiting, and then flying back with her to the nest, which is at least 100 yds from here (as they become lost to sight among some pines at that distance).

In gathering she pulls and tugs vigorously at various bean tendrils and straws, jerking her head from side to side like a pup with a rag, when the object of her tugs fails to break off. More than half the time she is unsuccessful in breaking off the tugs, and after several tugs is obliged to go to another

Certhia sparverius 4.

Mar 2, 1932. Saw the sparrow hawk on the telephone wire, as usual, today (see preceding note).

Mar 11, 1932. Today as I drove by I saw two of the hawks on the wires; I suppose they are mates.

July 18, 1932. Passing through the outskirts of Menlo Park, at the locality mentioned just above, I saw a hawk on the wire, again.

Dad Russell brought home four young sparrow hawks from Nevada, to the M.V.Z. Their history before I got them will be given later. Yesterday, when I took two, a ♂ and a ♀, they were practically full grown as to stature and feather development; in fact they seem entirely so to the eye. They had been fed on small birds, mice, and a few white rats from the time they were caught, and showed no external signs of mites. However, only about day before yesterday, just one and then another of the ♂♂ of the two began to keep one or both eyes closed (the ♀ showed no such trouble).

1

Callipepla aurora septentrionalis

2/15/30. 2 mi. east of West Butte, Sutter Co. Calif. Flock of over 50 sailing in open formation over hills toward the east at 7:30 A.M. Migrating?

2/16/30 About 5 seen circling over W. Marysville Butte at 8:30 A.M., flying low along ridges.

March 7, 1932. Alpine Creek Ranch (Ralph Ranch), San Mateo Co., Calif. Today I saw, in the morning one buzzard, in the afternoon two, in each case lacking and veering in leisurely manner above the west slope of Los Trancos Canyon. This is the first time that I have ever seen buzzards here (have been working on the quail experiments here 2-4 days a week since last August); perhaps they are passing through on their northward migration.

May 20, 1932. Alp Cr. R. by Quail Enclosure. One seen flying past today.

19.

Cerchneis spar vermis

- 7/25/30. Los Banos Game Refuge. Merced Co. Calif.
One ♂ seen on fence wire of extreme northern boundary.
- 7/29/30. Same place, probably same bird.
- 11/20/30 Between Morgan Hill and Gilroy, Calif.
A sparrow hawk observed flying after a grass hopper about 20 ft above paved boulevard. The grass hopper was flying across the road, more or less irregularly, with the hawk in pursuit. The bird would fly at it, then check its flight to a slow fluttering and seem (not sure) to try to catch it in its bill (perhaps feet). At any rate it would fail in each case and as the insect would elude it the bird would hurriedly flap after it, slow up, and repeat its clumsy maneuvers. Just as I wrote by it suddenly stopped and perched on a fence; whether it had been successful or not I couldn't see, but think not.
- 8/23/31 About 5 mi. e. of Menlo Park, San Mateo County, open field by highway. A family (apparently, sexes mixed) of (at least) five sparrow hawk observed by me for a few moments as they played a game of tag.

It was played thus: any particular bird would suddenly dive down from above on any other individual which might be flying at a lower altitude and chase it, zigzagging or undulating in close pursuit of the other as it playfully seemed to escape. In a moment both birds, or ~~the~~ one, would coast upwards to a high elevation once more and sail off, to alight on the telephone wires perhaps, while some other bird would take up the chase after the fugitive, or else the fugitive would turn pursuer and chase some other bird which was near by — it was all hit and miss, better shelter.

See page 473 of my ^{very} first journal — the big ledger book containing the weights of birds and mammals — for an account of a sparrow-hawk pursuing and capturing a bat at dusk — at Big Bear Lake. This is similar to the experience of George Wright as given at the last annual meeting of the Cooper Club.

Feb. 28, 1932. Same place as that referred to on pages 1st, under date of Aug. 23, 1931. I drive by this place on an average of 2-3 times a week, and very frequently see a sparrow hawk perched on the telephone wires. There is only one now, in place of that merry throng of last August, at least I see only one, but then, I go by there at 50 mi. per hour, which doesn't permit much scanning; possibly there is another one around also - its mate - but I'm sure that there are no more than this, or I should have seen them. Probably the bird which I do see is one of the original group, for the locality is right at the edge of town, in a place seemingly not particularly suited to sparrow hawks (i.e. open fields, few or no dead trees, service stations present, and side walks), but as it occurs as though the bird was clinging to a spot which was being slowly obliterated by civilization. New-corner would not be likely to pick such a place.

Certhia sparverius 4.

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There was no matter around the eye, and it could be opened upon occasion, when the bird became excited, but nevertheless the eye (in some cases both eyes, part of the time) was held closed nearly all the time. The eye was in all cases noticeably less protruding than the eyes of the healthy birds. I think actually, as well as in part, relatively, from the head feathers of the sick birds being more puffed out. The birds thus affected were feebler and ate less, too. I don't know what the cause of this malady was. Perhaps it was lack of exercise and, especially, lack of air and sunlight, for the birds were kept in a room in the M.V. Z. where no sun ever entered, and where the windows were mostly kept closed, as well.

One of the two birds, the ♂, which Ward gave me has one eye affected in this way, so that it is kept shut most of the time; the other eye is also closed sometimes, but not so

much. The ♀ is O.K., as already stated.

July 19, 1932.

Last night was colder than most - cold enough so that two blankets were necessary on my bed in the room; it was foggy in addition. The sparrowhawks, sheltered from the wind by a blanket at one end of the cage, seemed to experience no discomfort. The ♂ had his head under his scapulars when I first shined the flashlight on him, about 9:30 P.M.; the ♀ had her head pointing straight ahead; perhaps she had been already awakened by my approach.

~~This morning~~

We fed the birds a lutescent warbler, a species, having first plucked all rectrices and remiges, and part of the body feathers from the warblers. When we gave the warblers to the hawks the latter crouched over them squealing with wings spread - the characteristic spreading reaction. They tore the fragments from the birds with their bills, prying with their feet and pulling with evident effort,

rending even the thighs from the
bodies after several vigorous tries.
These thighs the birds swallowed
entire, foot and all! In
one case (the ♀) the
foot of the warbler protruded
from the bird's mouth for several
seconds after the rest was swallowed,
until, by dint of violent swallowing
movements it too disappeared.
The ♂ started on his warbler by
picking a ~~whole~~ rose in the soil
and then working posteriorly,
swallowing head and all. When he
got to the wings he tore them off
and ate them separately, as he did
the legs.

Both youngsters hold their heads
up and down, sometimes quite
rapidly for a moment, when their
curiosity is excited. This seems
to be a characteristic motion
with falcons in general (for
example, the wounded Prairie
falcon that I kept for some time
at Pomona College); it is analogous
to the head swaying of the auk.

Certhia sparverius

8.

Both birds have evidently long since learned to associate the approach of a person with food, for whenever one approaches them, even when they are not hungry, they utter their squealing, begging call, with ~~be~~ beaks open widely, and body craned down. As soon as one is out of their sight once more, they stop.

Sometimes the ♀ teters her tail (unspread) up and down just as the adults do. I don't know whether this is done under certain definite emotional conditions or not; she had prey the only time that I noted the movement.

This morning, before I brought the birds any food, they began to play with an old dried-up mouse skin which they had discovered. They would give a little hop into the air and come down upon it with both feet, claws extended, and wings raised and spread. On at least one occasion the ♂ was seen to

Ceryle americana

9.

came down like this on just a piece of grass after the ♀ had dragged taken the mouse skin over to her own corner to play with. Sometimes, after pouncing on the mouse skin one or the other would drag it ^{para. wrap} in one foot, hopping on the other foot and aiding itself with its wings - just as my horned owl did with the bottle at Pomona College.

Saw the ♀ peck at the head of the ♂ not very hard though. Perhaps this was the cause of the ♂ eye affection, although I doubt it (because ~~two~~ many birds affected). She has on several occasions grasped one of his toes in her bill and tugged it violently, as though in play; he never resists except to try to back away. Not infrequently the ♀ picks at the bill of the ♂, as though saluting food from him; if she is really doing this it is somewhat surprising, for it must be many weeks since the young received food from their parents.

in this way (before they were collected by D. R., and the parents shot; age about 3 weeks at the time).

Ward says that during recent weeks - about the time they began to take on a mature look - they have eaten much less food than formerly.

July 20. The ♂ seems better, although he still keeps one eye closed part of the time. I fed him on a Cured Cal. shrike this morning, giving it to him whole. He has been at it for half an hour and still has it only partly eaten, although still tugging and tearing at it energetically. Neither he nor his sister try very hard to eat the wood rat and young rabbits which I put in, even when I strip the bones so that they may tear off small fragments. The meat and hide is too tough for them, and the meat clings too tightly to the bones; also, the whole carcass is rather too big for them.

The ♀, while flying about inside the cabin, flew full tilt into a large dresser mirror which

Certhia sparverius

11.

reflected the interior of the cabin back again in such a way that it looked like another room.

None of the flapping and jumping exercises seen. The ♀ flies readily and with precision; the ♂ has not done so, probably from lack of vigor. He certainly can eat, though; just now (3:25 P.M.) he ate all but the head, a few muscle fragments, and one shank of a song sparrow (nuzzles and rectrices and some contour feathers having been removed by me). The other leg he swallowed in one piece, thigh, shank, and foot, it requiring some determined swallowing to get it down, however.

Both birds ~~grasp~~ ^{to the bill} when offered a piece of meat ^{too large} to be readily swallowed, ^{here it then} lift up one foot, take the piece from the bill with it, and still holding it in one claw ^(clenched but) slightly above the ground, tear off little hunks from

Cecropius sparverius 12.

it until it is gone.

Today being warm (89°F in shade) the ♀ took a bath; the ♂ did not. (Saw her only afterward).

Gave the ♀ a live fledgeling juncos just out of the nest (brought in by one of the men). She pounced upon it and gripped it with one foot, but when she started to bite it with her bill preparatory to tearing it apart it gave a thin rasping squeak that scared her. She still held on to it with her foot, even though it struggled violently, but she was for a long time kept from tearing it apart. By its cries each time ^{that} she grasped it again with her bill. After about an hour she bit at it more determinedly, and shortly killed it by breaking its skull; about 15 minutes later it was all eaten.

July 21 - The ♀, when given a lizard (*Sceloporus*) had some difficulty tearing its tough skin. She started on its head, as usual, and succeeded in tearing out and eating its tongue and then its lower jaw,

but was unable to produce any effect upon its shell. When the belly of the lizard was slit open she ate its entrails, also one arm and shoulder, and, finally, the shell - although not the 'tough skin' which covered it.

Later, when given a live *Peromyscus m. gambelii*, she grasped it immediately and started to bite it. This mouse had its ^{hind} legs tied so that it could not run very fast, otherwise it would probably have escaped. She dabbled with the mouse, picking at it ineffectually for some time, just as she had with the bird yesterday, but, probably because it offered little resistance, she soon killed it, and started to eat it. The shell was first eaten, then a fore leg, but at this juncture its skin proved too tough, perhaps ^{because} she was weary of trying to tear it, and she stopped eating. When the belly of the mouse was slit open she went at it again, and ate

quite a lot more. Presently, having had enough, she tried to cache the food - something I have never observed before (although others have). She would pick up the carcass, drop it in a corner between the box on which she was perched and the wall, and then push it further into the corner with her bill. She pushed so determinedly that it became partly wedged in place, although the site chosen was a poor one for the purpose. I think this is an example of an instinctive reaction, an account of the definite and determined manner in which she tried to perform an act in a place that not only was not adapted to it, but by its shape, did not suggest such an act, particularly - i.e. the urge was called up by a more or less irrelevant stimulus.

The ♂ took a bath today (saw him only after the event). His right eye is still closed, his left is sunken, his breast is thinner

than that of his sisters, and he has less vigor, however, he seems somewhat more alert than when we first got him.

July 21 - He is lots more vigorous and healthy today. Although his eyes are not quite as bulging as his sisters, they have lost a great deal of their sunken aspect, and he now keeps them both open.

Both he and his sister grasped the mice today immediately upon having them offered, and each of the birds killed and ate its mouse in short order. They seize the mice in the region of the thorax, with one foot, and when held in this position the mouse is unable to reach around and bite them.

The other day E & I saw the ♀ squawking down on the ground, with feathers fluffed out, flapping around as though bathing. ~~But~~ The ground was hard packed so that these efforts were unavailing, however. Today, accordingly, I put a box ^{at} 1 x 17 x 3

pull of fine road dust into
the birds' cage. Although it was
nearly dark when I did this (about
7:30), the ♀ almost immediately
went to it and bathed. She did
this by squatting down, fluffing
out her feathers, covering her
eyes, and ~~scratching~~ ^{walloping} her lower
parts down into the sand.

continued page 16

July 25 - The two birds are eating less, outright. They require only two small birds, or mice, a piece, these days, and do not usually finish either one at that.

Photos

Photos were taken of them July 23.

August 17, 1932 - The birds have been left with Zoology Dept since July 30, and when fed, no one has taken the trouble to give the food call to them (squeaking on back of hand); consequently, they have not yet learned to associate it with food when I give it.

The birds seem to be entirely without fear of persons, but they do object strongly to being picked up. They show this objection by avoiding capture whenever they can, and when this does not avail by squeaking and biting. The biting is done with force enough to hurt, but not enough to break the skin. They also use their claws when they can, throwing themselves upon their backs when cornered and gripping with their talons, which sometimes may even pierce the flesh.

The birds will not fly from

a person no matter how closely he approaches if he keeps his hands down out of sight; thus, for example, I am turning my head up to one where it perches until the bird begins to rattle my hair without causing it to fly. If I approach with hands out stretched, however, the birds always fly before I can get within a foot of them. Occasionally, after I have been chasing them with my hands, they will fly even when I approach with my head alone, but usually they will not do so even under these circumstances. They will come and alight on eyes out stretched arm or on ones shoulder when one advances with a piece of food, and they will eat it while perched upon one, with perfect equanimity.

If one puts on the gloves which are used in handling them, the birds immediately recognize the fact and fly away when one is still several feet away, and will keep flying, under these conditions, as long as

one keeps pursuing them while wearing the gloves.

Yesterday when Ethel went to feed the birds on the back porch, they saw the piece of meat in her hands when she ~~was yet on the~~ first entered the room (15 ft away) and they immediately flew squeaking to her and alighted upon the arm which held the meat, squeaking the while, with drooping, trembling, ~~out~~ extended wings.

The birds certainly show individual differences. The ♂ is and always has been (since I got him) more noisy than the ♀, although he is much less noisy than he used to be. He still calls whenever anyone comes within his sight, even when not hungry, but if one does not directly approach him or pay any attention to him, he quickly ceases. The ♀ calls only when hungry and about to be fed (at which time the ♂ calls also, of course). The other two birds of Ward Russell, both ♂s, showed similar differences; one

called so incessantly when persons were in the room that he at length turned it loose in disgust. The other bird was only when being fed, and pays no attention (at least by crying) to persons moving about in the room.

The birds eject pellets of fur; none examined yet.

They bathe frequently, too, once every day or two. The bathing motions are similar to those of other birds. The birds ~~do~~ get into the dish, spread their tails and half open their wings, then duck their heads down into the water and at the same time squat down and quiver the feathers of the body, tail, and wings in such a manner that water is flung to some extent onto their heads and backs as well as beneath them.

They continue to be as playful as ever too, and like to pick up things, either with bill or claws, and bring them about. The other day they spent a lot of time dragging a large (10 penny) spike around on

the floor, - first one and then the other staring it. Yesterday the ♂ was seen to perch on the edge of a dish for five minutes or more and pick up and drop over and over again, with his bill, a .22 bullet which lay in the dish. Each time that it dropped (from a height of not more than $\frac{1}{2}$ inch), it gave out a ringing clink on the china dish, which probably helped to stimulate the birds' interest.

During this same time the ♀ kept biting at the cork of the ink bottle on the table. The cork was about $1\frac{3}{4}$ " wide and was just cork and no paint or any other substance. She bit and tore off many little fragments of the cork until it looked as though it had been gnawed on all sides by a mouse. At times, while engaged in this, she would tip the ink bottle over, and at this some of the ink ran out onto the table, but this circumstance did not deter her in the least.

Aug 20, 1932 The ♂ is always more aggressive in pursuing live prey, for some reason — in spite of his rather recent period of illness which at the time reduced his vitality (he is quite recovered now). When I hold a live mouse in front of the cage door both birds usually approach, screaming and extending their trembling wings somewhat as shown,



but it is the male, invariably which reaches up with one ~~claw~~ foot, or with his beak, and snatches the mouse from the panes. He rarely loses his grip upon the mouse, even when the latter squawks and struggles, and when he does happen to do so he instantly runs after it and grasps it again with one foot. The ♀, on the other hand, has to have her mouse offered before her very beak before she will accept it, and even then, she drops it at the moment

Certhia sparverius

22.

of receiving it, nearly half the time. When she drops it, she often hesitates before chasing it, and not infrequently lets it get away entirely. If the mouse, in its efforts to escape, happens to pass near the ♂ he invariably grabs it with one foot, even though he may already be feeding upon another mouse which is held in the other foot.

I have noticed that the birds not infrequently chase each other about the room, not apparently, out of vindictiveness, but in sheer sport. One will fly the length of the room for one reason or another, and will thus precipitate the game, for as soon as it flies the other bird will leave its perch and fly after it, alighting at the same spot as the first bird a fraction of a second later — sometimes even, landing partly on top of the first bird. The latter, upon thus suddenly approached by the other, usually takes off

again in flight, on the instant, and is usually pursued again, just as before. Sometimes this will go on for several seconds, until one or the other tires and remains where it is. This sort of play recalls to me the game of tag played by a family of sparrow hawks at Menlo Park last year (see ante).

Aug 21, 1932 The youngsters do not spend all their time in playing by any means. For a half-hour or more the ♀ has been sitting on the molding of the front room, not moving, except to stretch a wing or a leg occasionally, and to occasionally look around in different directions; the ♂ has been standing, almost equally motionless, in front of a window, following with bobbing head and craning neck the motions of autos and streetcars on the boulevard, 175 ft. away.

Aug 23 - See under *Loxia* p. 335 for account of a covey of quail sitting in the brush and giving the alarm

call continually, at the young sparrow hawks, instead of retreating, as though molesting them.

Yesterday the ♀ successfully tore up and ate a fence lizard (*Sceloporus*) entirely unaided. She was pretty hungry, which may have added special incentive to the work.

The ♂, as mentioned before, is more noisy than the ♀, cringing out with his begging cry at sight of anyone even when he has just been fed — in fact, with food still in his talons, or bill. He usually keeps the cry up as long as one is in sight, too, which makes him a most tiresome pet at times.

Since yesterday I have changed to a whistle for a feeding call, since I can make it better and it is not drowned out by the begging calls of the birds themselves. We are starting with a clean slate on the learning test, then.

Yesterday I put a ~ 18" garter snake (*Thamnophis ordinoides* sp.) into

the cage with the ♂. The latter was quite hungry, and begged eagerly for food, but did not snatch the snake from my hands, as ever pursue it when I dropped it onto the ground. He craned his neck and watched the reptile attentively from a distance of two feet, but did not venture to attack, although, on the other hand, showing no other evidences of fear. Presently, when the snake lay still, he lost interest and paid no more attention. Since the snake was much larger than he was, and $1\frac{1}{2}$ " thick at least, it is not surprising that the hawk did not take it; perhaps he did not even regard it as food.

Aug 24, 1932. The ♂ has been such a confounded nuisance with his perpetual squeaking, that today I resolved to try to teach him to stop it. Accordingly I have filled an "Oronite" spring oil gun (Standard Oil Co.)

with water, and have directed the full force of the fire



jet into the face of the. Every time he squawks. The jet is powerful enough to carry 25 feet or more. I began this treatment at 2 P.M. today and kept it up until about 4, spraying the bird every time he made a sound. At the end of this time he was wetter than when he takes a bath, and very bedraggled. At 4 we took both birds down to the Alpine Creek Ranch, and since they squawk hardly at all while the car is in motion, we had no trouble with them. When the car stopped at its destination and we got out, the ♂ started his nerve-wracking squeak again, but was immediately treated to a further chastisement. He quieted down immediately, and since we did not go near him again until after dark, he made no further sound. It is to be noted that the bird makes this noise only when he catches sight of persons, not when he is alone, even though he may be hungry. Even by

three o'clock, after perhaps thirty-five to fifty shots had been taken at him with the water, he showed a marked tendency to remain quiet when we moved about. Perhaps this was the effect of learning, indeed I think it was, in part, but also, it may have been in part due to the effect that after he became very wet he may have felt slightly uncomfortable or subdued, and not inclined to make loud noises.

Aug 25 The next day discipline was kept up, as it will be every day from now on, however, as the birds were at the alpine Creek Ranch all day until about 6 P.M., they received little attention and so had no occasion to squeak. When the ♂ is manifestly hungry, as for instance early in the morning, I never squirt him until after he has been fed. Phel has not been disciplined at all, since she does not squeak enough to warrant it.

Aug 26, 27, 28 These three days the birds were in Oakland, by themselves all day, in the rooms of the house (Ethel & I being away all day), consequently the only disrupting done was late in the evening when we arrived home and were putting the birds to bed at night; also, occasionally in the morning just before we left for the day.

Aug 28: The birds can now tear up whole lizards with ease, and when hungry, make short work of them, eating all but the last 1-2" of the tail, and ~~that~~ within the space of a few minutes. They have been given one or two lizards each every day for several days.

Their calls are as follows:

- (1) knee-knee-knee, (rasping and low in tone in the case of the ♂; clear and more of a high pitched squeak in the ♀). This is the begging call, often given with extended, fluttering wings and spread tail.

when the bird is particularly hungry.


- (2) A ~~good~~ clear squeaking
 her, with a grating rrr at
 the end, thus her-r-r-r. This
 has been noticed mostly
 when the birds were
 slightly apprehensive (they
 never get really frightened,
 or resentful, as when a
 hand is moved toward
 them to pick them up. The
 ♀ being the least tame, and
 the least willing to be handled,
 gives this note more often
 than the ♂. (See page 30 for additional
 instance).

- (3) The high pitched, excited
 klee klee, klee klee of the
 adults. This has been given,
 so far, only twice: once, I
 think, when some quail
 were sitting in the bushes
 nearby and scolding;
 several times also, when I
 could see no cause at all;
 once, when I picked up the
 ♀.
 To say the ♂ was seen to hide


food for the first time. He had just been fed all that he would eat, and upon being offered a very small piece of meat additional he took it, flew to the next room with it and proceeded to try to wedge it behind the window shade where the mallet part is at the time. While pushing the piece against about with his bill he kept uttering the *ker-r-r-r* note, as though disturbed or angered; however, his sister was not even in the same room, and the observer ^(other) was concealed in still another room. He made this noise several times while hiding not only this piece of meat but, later, another very small piece (no larger than the nail of ones little finger), as well.

This same day the I pushed a rather large bowl (the one she used to stand in while picking up and dropping the bullet) off the shelf, so that it crashed to

the floor and smashed.

I ought to re-emphasize the small size of the meat particles that the ♂ hid. It was so very small that it would have been much easier for the bird to swallow it instead of hiding it:  $\frac{1}{8}'' \times \frac{1}{4}''$.

This affords an excellent illustration of the unthinking, impulsive, instinctive way of doing things so often shown by birds.

About two days ago one of the birds flew away with one of the gloves that I use to catch them with (and which they dislike, as mentioned earlier). When I got home at night I found that it had been taken from the vegetable lid where I had put it  and carried

into the next room, 20 ft away, where it lay on the floor.

Aug 29 The ♂ still squawks to a certain extent, and, indeed, has not improved much over the last two days, however, he is better than at first. The ~~to~~ come

Cerechne's sparrow

registering improvement has
~~flattered~~ ^{improved} considerably, indicating
 probably, that the impulse to squawk
 at sight of persons associated with
 food, must be strong.

Aug 30 - Youngster squawked but little
 because not given much attention
 (he was at Alpine Creek Ranch
 again). The birds are capable
 of eating one mouse plus 1 to
 2 lizards apiece each day now.
 Two mice are equivalent to
 1 mouse plus about 1 1/2 lizards,
 and are also sufficient.

Aug 31. The youngster was at home
 today and certainly had a relapse.
 Ethel kept him soaked nearly all
 morning and I did the same in
 the afternoon. His course of
 learning would be about as
 follows (improvement at end of day recorded):

Perfect
 work about
 here: →

perfect
 score
 about up here →

Aug	24	25	26	27	28	29	30	31	1	2	3	4
	* 1/2	*				* 1/2	*	* 1/2	*		* 1/2	*
			kept in house and visited only infrequently					escaped				
	5	6	7	8	9	10	11	12	13	14	15	16
	* 1/2	*						* 1/2				

* = down at
 Alp. Cr. Ranch (fractions = part of day)

Perhaps part of the squawking may have been due to the fact that he had less to eat than on some days (until late afternoon), but since he squawked immediately after having coaxed the hindquarters of a lizard in the cage, I think that hunger played but little part.

Of course this learning experiment is not to be compared with learning experiments of an animal where the choice is unhindered by an instinctive tendency (as in rats and chicks choosing between two doors or exits). It is ^{more} like the situation with Breeds' chicks which were taught to go around the long ^{covered} way to regain the companionship of their fellows, instead of going the short direct, ~~uncovered~~ uncovered (but screened) path.

Today the ♂ developed a new reaction when being squirted with water. After becoming thoroughly soaked, but still yelling, he would, upon being squirted once more, run into a

corner of the cage opposite the jet of water and stand there in the corner, silent, motionless, and with head ~~beak pointing~~ nearly straight up and head thrust into the corner. Evidently this was his attempt at hiding from the attack. Not once, but several times during the afternoon, while in his cage, he did this.

Sept 1, 1932. The ♂ has not had to be chastised so far today (11 A.M.), doubtless in part because he is at the alp. O. P., and receives very little attention.

The ♀ has been giving the excited hlee hlee hlee call frequently this morning. Probably she has been seeing birds in the bushes and trees nearby.

I gave the ♂ a live S. F. towhee whose wings and tail ~~feathers~~ had been clipped off with scissors but which was otherwise in good health. It struggled violently and nipped my fingers hard just as I was handing it to the ♂, so that for a moment he drew back his head without taking it. An instant later he

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grasped it with bill and one foot, however, and from that moment on the towhee had not a chance. It struggled twice while in the clutches of the hawk, but was soon bitten on the top of the head so hard that it died without further struggle. I had not plucked it, as I have all previous birds, and the hawk was obliged to do this, as soon as he had eaten the head and was ready to start on the body. That he "knew" enough to do this without previous experience seems natural, and its explanation apparently requires no invoking of "instinct". At the first bite into the body, the hawk got only a beak full of feathers, and these he immediately dropped, shaking his head violently from side to side in doing it. The next bite netted him a little bit of flesh more or less free from feathers, but the third bite was again all feathers, and thus were discarded as before. Whenever

he got a mouthful of feathers he discarded it. when ever he got a mouthful of meat, he swallowed it — thus does the art of plucking feathered prey develop. Soon there was a great pile of torn feathers around the carcass of its prey, but the carcass was by that time half eaten, also. Sometimes the bird showed a lack of acute discrimination, and swallowed a mouthful of feathers, especially when they were moist with blood or other body fluids. Probably with practice the bird would learn to avoid feathers more consistently.

Presently the ♀, who had swallowed her lizard but was still hungry, came to the bird and endeavored to eat from it too. The ♂ protested with frequent little *ker-r-r-r-r*, but she paid him no attention and ate from the bird anyway.

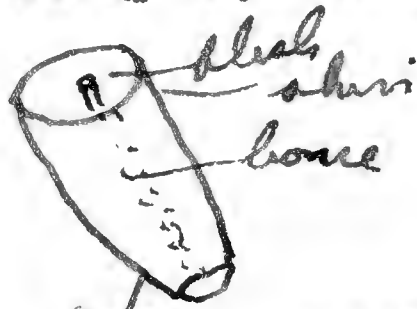
I forgot to mention that on Aug 26 the birds were given pieces of a large frog (caught at the Algeria Creek Ranch) for their first

[Aug 26 →]
invention

meal in the morning. Although both birds were very hungry it was at once evident that the pieces of frogs leg which were given them were distasteful. Both birds, after one or two bites, shook their heads violently and wiped their bills on their perches, then, after another bite or two at their meat, they dropped it and paid it no more attention. I skinned these same pieces of meat, and offered them again, now with the tender white meat showing, and this time the birds accepted them and ate the meat from the bones, with moderate relish. That they did not accept them with more eagerness than they did, after skinning, was I think due to the fact that some slight association of eating this meat, and a bad taste lingered in their memories.

It is probable that some hawks which eat any thing is a state of nature, may skin them. If this is so, the manner in which they

learn to skin them is doubtless similar to the manner in which they learn to pluck feathered prey. It was illustrated by the way the ♂ dealt with one piece of frog leg which I did not skin. After biting it near the middle, and being unpleasantly stimulated by the poisoning glands in the skin, he commenced next time on one end of the leg, where it had been severed.



Here he encountered palatable, tender meat, and thus he ate, pushing the skin before him as he ate, and rolling it back out of the way also with his claws. When he had finished the leg it looked like this:



Thus, as with the feathers, he ate what was good and discarded the rest.

Today (Sept 1). The ♀ was

observed standing on the edge of the water dish drinking, not bathing. She did not tilt her head back very much after each dip into the water, and the whole process looked rather inelegant, but she evidently did drink some water. She took ³ sips while under observation; doubtless several before being observed. The water had been put there a few minutes earlier because she had been noticed panting (temp. about 93°F).

Sept 2. One of the birds (the ♂ I think), plucked its mouse today just the way the towhee was plucked last time. There was a little heap of fur all around the mouse. This plucking of mice is a new reaction and must have come as a result of learning to pluck birds.

The birds although very alert and curious regarding moving objects and other novel stimuli, pay hardly any attention to auditory stimuli. They have not yet learned to associate the

approach of food with whistling, although the sound has been given every time the birds have been fed. (usually twice a day) since the time when the experiment was first recorded (see ante). Sometimes in the morning when they are particularly hungry the birds will start to give the begging call when they hear us moving about and talking just outside the (closed) door of their room, but even this is ~~rare~~. Today I checked my test and made other loud sounds while out of sight of the birds without their looking in the direction of the sounds at all, although they were both unoccupied and staring about with curiosity at objects which caught their eyes. I have noticed this same lack of attention to sounds in many kinds of birds (e.g. *Lophortyx* p. 344).

Sept 5, 1932. The ♂ has certainly learned to keep his mouth shut, as indicated by the curve on p. 32. He hardly ever yells any more, except sometimes when being

moved about in his cage, and when hungry and in the presence of food. When persons pass near him he hardly ever yells now, being, if anything, more silent than his sister. His sister is not so docile as he, showing thereby a temperamental difference. Although not actually afraid of persons, she nevertheless objects more strongly than the ♂ to being handled. She is more difficult to catch, and fights more fiercely when being handled. Because of her objection to being caught, she will not perch upon ones shoulder or arm, or knee, to be fed, as her bro. does readily, unless she is quite hungry. Often she will perch at a distance, at the morning feeding, begging eagerly but refusing to alight on my shoulder while her bro. sits there and stuffs himself. At last, however, hunger usually overcomes independence, and she comes to me - but persists in alighting on my head (which

is the most inaccessible point on my body as regards the danger of her being caught by me unless, I withhold food until she comes down and alights on my arm. This she at length does.

This morning I put the ♂ into his small cage, with a live S. F. towhee which had not had its wing and tail feathers pulled or in any other way hampered in its movements. Both hawks had recognized it as food from the first and had been perching on the top (outside) of the cage, trying to get at it, for some time. For a moment the towhee eluded the ♂'s grasp, but only for a moment. When seized, it screamed and lit at the head of the sparrow-hawk, but the latter, lit back repeatedly, and having a better reach to his bill, inflicted all the injuries. The towhee was dead a moment later, having had his brain bitten into, like all the hawks' prey, and the ♂ proceeded to

pluck his feathers out and eat him. Of course the bird chilly-called a lot during the course of his work, that is, he frequently stopped and looked all around, even while the towhee was still struggling.

The ♀, on the outside of the cage, kept flying against the wires and clinging there, trying to get at the towhee upon which the ♂ was feeding. The latter kept giving the inevitable *ker-r-r-r* call when she did this, evidently meaning "keep away; don't bother me".

In the afternoon I gave the ♀ a live towhee, which she treated just as the ♂ had his.

Sept 13 - A pig broke into the cage at the Alp. S. R., making a great hole in it. The ♂ apparently escaped, for I found no feathers anywhere around. The ♀ was still inside the cage.

Sept 24. The day after the ♂ got away, I noticed that the ♀ was crying much more than she had before, quite like the ♂ in fact, in that she did so

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even when she had just been fed. Accordingly, I began to use the water "chastings" upon her each time she did this (I had not previously punished her for this at all). Her improvement came was much steeper than that of the ♂, perhaps because she had never been a chronic yeller like him.

perfect stomach	24	25	26	27					
	14	15	16	17	18	19	20	21	22
				* 1/2	*	* **	*		
1/2 perfect stomach									

23 24 .
 1/2 *

At the present time she never yells except when hungry. # Beginning today I have resolved never to catch her with my hands any more, but instead, when moving her from one cage to another, to hold her into a small transferring box. I did this today, and it took so long to get her to go in that the effect upon her disposition must have been nearly as

good as if I had actually handled her. Handling her makes her hesitant afterwards, about coming to perch upon ones arm as birds when receiving food, this latter being a trick which I am trying to get her accustomed to.

About Sept. 17 I made for her a cage $4\frac{1}{2}$ ft \times 12 ft \times 6 ft high, which is kept in the parlor. It is long enough so that she can fly from a perch at one end to a similar perch at the other, without being cramped, and thus she keeps clanging, back and forth, back and forth, in the mornings after having been fed. Apparently the exercise gives her pleasure, for it is evident that she does it not as an attempt to escape the confines of the cage.

To day I put a ^{small} piece of sponge to which bird netrics were fastened so as to resemble young, into the cage, and jerked it about by means of a long thread. The bird showed her appreciation.

of the fact that it was not a living thing (or at least that it was not "genuine") by the fact that she vouchsafed it but little attention after the first few ~~reconnoiters~~ (sp. is this the word? want anyway?) She alighted on the floor at first, and stared at it from a distance of about 8", and then later did the same when it was dangling in front of her as she sat on a perch. She never seemed to try to seize it, however, and presently lost all interest. Something which she does not do when I put a blue mouse or sparrow into the cage.

Sept 27. Ab. 10-11 A.M. After being fed the ♀ kept up her flying exercises inside the big cage, for nearly an hour without pause (except momentary stops between take-offs). She has become much less timid than before, as shown by her holding her perch, instead of flying away as she used to do, when one of us approaches to within a foot of her. E. has been in the

Cochineus sparverius

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habit of talking to her, blowing on her, and jiggling the perch, whenever she (E.) comes home, and this attention the hawk evidently likes. It will sidle along its perch until, only the wire separates it from E.'s face, and will stare at E. with its head on one side, and nibble ^{gently} at her fingers if they are thrust into the cage. The blowing does not cause her alarm or discomfort, nor does the rotating or jarring of the perch. Often the bird gives a low (not emphatic or inevitable) keerr when a finger is thrust toward it, the note seeming to denote curiosity rather than hostility, as the same note uttered in a louder, harsher tone seems to do.

Her play activities still continue, although they are not shown as often as the used to be when the birds first came. This afternoon she jumped about on the floor of her cage, grasping at bird bones, and even small single feathers that were lying on the ground, and biting them just as

she does with real (live) prey. Often she would jump about and land on nothing at all, or move her head about abruptly as though following the flight of some imaginary prey that was endeavouring to escape her!

Sept 28, 1932. The bird has increased in tameness markedly since being fed by hand and since I have given up catching her with my hands. She is about as tame as the ♂ was, and remains on my arm during the whole feeding process unless I give her a piece of meat so large that she has to tear it into bits, when she prefers to fly to a perch in the cage, and tear it up there. She permits me to walk directly beneath her, so that I brush the perch with my head without bawing. The little h-ee note (of curiosity?) and the jilickings at ones finger through the wires of the cage, continue. This afternoon she perched on the edge of the dish and drank.

three or four sips of water - something I have noted only once before (see notes, at the beginning). The day was not at all warm (temp. ab. 76.0°F) and the cage is entirely in the shade.

When feeding, a small piece of meat, and sometimes a larger piece, may often be held down by only one claw when the bird is upward with her quite hand. The claw, rather, may bend under the strain, but not enough to make much difference.



Very often when eating pieces of steak meat the tip of the bird's bill becomes imbedded in the meat and prevents its being swallowed, which costs the bird much effort. She doesn't ever raise her foot up and disengage the fragment from her bill as she might easily do, but just keeps on swallowing, with the jerking

Cochinus spannerus 50

motion of the head displayed by
so many *cammarus* feeders,
until ~~it~~ ^{the} finally comes free and
is swallowed.

^{tip of}
bill imbedded
in meat



After she has finished a meal, but
usually not before, she wipes her bill
vigorously on the perch, scrubbing
it back and forth against the
perch first on one side of the
bill (and perch) and then on the other.

Oct 8, 1932 She "yawned" 3 times within the
space of about two minutes, then about
7 times during the following minute.
This is evidently not a yawn; she
must have something stuck in
her crop. Just now, she did it

6 or 7 times more.

(After a while she stopped; haven't
even heard of it since (Oct. 12); ^{argue}
it caused by a pellet ^{later to be}
ejected?)

October 12, 1932. The ♀ has definitely
learned to associate my whistle
with the bringing of food. If she is
hungry she will spread her ^{vibrations} wings
in the begging posture even when
I am out of sight in the next
room, whistling. She does this without
making any sound; thus, as soon

as I come in sight she redoubles the begging motions (i.e. crouches, walks about ~~in~~ with wings more rapidly vibrating), and begins to give the begging call as well.

She is now so tame that she will alight on my arm, head, shoulder, as back as I enter the cage, with no hesitation. She also nuzzles at ones fingers if one puts hers through the wires near one of her perches. This finger-nuzzling has been going on for about a week now, becoming more and more marked as a habit each day. It has developed now to the point where she will come prancing along the perch (wings half unfurled to balance herself) and reach for the finger with her bill. If she gets it she gives it a nuzzle that is sometimes gentle and tentative, but often hard enough to be painful. This whole reaction must be that of play, exhibiting curiosity in just one more way. In ^{rubber} measure she will nip once or twice, gently, and

then lose interest but not so with a finger; the latter she can bite into heels, and she tries to catch it, each time that it is shoved into the cage and then rapidly with drawn. Sometimes she tries to grasp it with her claws, but so far she has been unsuccessful (thank God), unlike her attempts with her bill.

Today put a full grown wood rat into the birds cage. She surveyed it from afar, but made no attempt to catch it (during the very short time that it was inside the cage), although she was hungry. This is not surprising, since the rat must ~~weigh~~ weigh about as much as the bird. If it was dead, and lay motionless, she approached it, but at this point I took it away in order to submit (being in a hurry).

Like birds such as towhees and golden crowned sparrows, she chases on sight, and captures within about 30 seconds, although they usually succeed in dodging.



her 3 - 7 or 8 times first — ~~the~~
in spite of the fact, that they are
bewildered by strange surround-
ings, whereas she is not.

Oct 16th - A. B. R. On hearing the excited
klee klee klee klee of the ♀ I (as usual)
tried to see what the cause was and
(for once) was successful. Her eye
was cocked upward at a red tail
which was soaring in circles about
500 ft or more nearly directly
overhead. I couldn't see that the
red tail paid her any attention, but
the sparrow hawk was very evidently
observing the latter.

Oct 17 - The ♀ sp. hawk uses her claws
only to seize and hold her live prey,
and I have never seen her attempt
to "break it" in order to kill it. The
killing is all done with the beak.
The claws usually only surround
the prey, usually at the neck, and have
never produced injury, apparently. Any
bird or animal which succeeds in
wriggling loose from her not very
tight grip, shows no signs of injury.
Most of the time now she shows a

tendency to start pulling out the feathers of her birds before she has killed them, sometimes before she has bitten them at all. Occasionally a bird escapes from her after she has pulled out quite a pile of feathers, in fact.

Usually, however, she will pull a few feathers, then bite the bird, then pull a few more feathers, then bite it again, until it is dead — always with many pauses (not pleasant for the victim) to stare about. She never pulls out all the feathers even now, but only enough at any one time to expose a portion of the underlying flesh.

She prefers to eat her prey from a perch, but usually the fact that I give her (as woodrats, skinned; gars) is too heavy for her to carry. To day she carried a golden crowned sparrow up to a perch, but soon had to drop it and descend again to the ground in order to eat it. Small mice, and bits of raw meat, are almost always eaten from a perch.

October 27 - I think that I - yes I did mention that the bird had learned to associate

my ~~to~~ whistling with the humming of food. This has become very marked when she is hungry, the begging motions being quick, when she hears my whistle even when I am not yet in sight of her.

That sparrow hawk can see under adverse light conditions is shown by the fact that this bird frequently flies down to the floor of the cage in the evening when the light is on in the next room, and eats from the bird or mammal remains which are there - even as late as 9:15 P.M. The light is ^{ab. 15} 30 ft away from her cage and is ~~fairly~~ strong enough to permit one to read easily - fine newspaper print at that point where she does her feeding, ^{except when she stays in her own shadow, when it is not strong enough to do so easily.} About 7 pellets have been collected since the bird was put into this large cage (for data see ante). They do not seem to be at all regularly cast. They are composed of felted ~~and~~ feathers. October 28 - In eating lizard today I noticed that she discarded most of the skin of the back, where the scales are

largest and loudest. She would pull off fragments of her back skin about the size of one's little finger nail, or smaller, and flick them to one side with the same motion that she gives to discarded feathers - only, since the scaly skin was heavier, it flew to a distance of a foot or so instead of an inch or two away. The bird ate four full grown lizards to day (Crotaphytus); she has long since learned to tear them apart rapidly and easily, always beginning at the head end, of course.

Oct 31, 1932. About ten days ago I described the bird's playful activities when persons are concerned, and her habit of running along the perch until she was near the observer, and her habit of twacking one's finger through the wires. I may or may not have mentioned a frequent trick she shows of lowering her head until the bill is to one side of and below the perch, when someone first approaches her (~~but~~ ^{or} she first approaches him, as he may be) to play; if

I did not mention it, it was because I was not sure of its meaning, or even of its regular occurrence. I am still ignorant of its meaning, but I have seen it now many times, so I can no longer doubt its occurrence. The act is only given when one first comes near the bird; after three or four performances it is not repeated, no matter how long one remains by the cage wires, but if one goes away and then returns again, it may be repeated. It is given especially after either of us (but especially C) has been away for several hours. The act consists of running along ^{towards us} the perch (or floor in some cases) until the bird is right up next to the cage wires, where we stand, with our fingers held close to the perch. As the bird approaches to within the last two or three inches it lowers its head, as described above, while taking the last two or three steps. - This although the fingers are 3 or 4 inches above where its head would

When held in the usual position, it is like a sort of slow, sustained chucking, only there is nothing to chuck from. If the fingers are taken away and straightened up, then if they are held up above its head, the bird lowers its head again, sometimes raising it slightly if the fingers are very close as though to give them a nudge. After about the 3d or 4th time however, the bird no longer ducks her head but nudges the fingers in the usual playful fashion instead.

Is this a sexual response? The lowered head suggests it; however, the time of year and age of bird, do not lend weight to the idea. It is certain that neither fear nor hostility enters in, for the bird comes to us voluntarily for this little greeting ceremony.



rather drawing, but shows general position of head;

tail should be made up in the air, as in former drawing.

October 30, 1932 In the ~~evening~~ ^{evening} I put a
 double fronted jay into the cage giving ^{her} ~~the~~ ^{the} usual food whistle. ^{had had only one leg and all} The hawk flew ^{and} down to ^{the} ~~it~~ ^{the jay} walked around it undecidedly
 several times tried to perch on it but
 lost her balance when it rolled over,
 and finally flew up to her perch
 without having need to eat it. She
 experienced the same difficulty trying
 to perch upon the jay that we should
 in trying to stand upon a log (although
 she can stand on golden crested
 sparrows, mostly with one foot
 just as we can stand upon a
 branch). All that ~~day~~ ^{evening} she had
 received no other food but she did
 not touch the jay, although begging
 for food frequently. The next morning
 it was the same, no other food was
 given her, but she would not touch
 the jay. When I came back that afternoon,
 however, she had at last pecked the
 strange large object and had eaten away
 most of the meat from neck and
 shoulders. The feathers were so big
 for her to pull out, though, even
 on the body, and she had merely

Oct 31

dig a hole into the meat without disturbing them for the most part. The large pectoral muscles ~~had~~ were still covered with feathers and had not been touched. I tore off the rough skin of the jay, together with the feathers and exposed heavily practically ^{all of the} meat of the body. At this the sparrow hawk descended and made a considerable meal, which she also did again that evening, as well as the following morning when the jay was quite thoroughly cleaned to the bones.

Did I mention that about a week ago she did not attempt to eat a thrasher although she was very hungry until after I had pulled off most of the skin and feathers? Its size was about equal to that of the jay.

Nov. 1. ~~Bought (at 8 p.m.)~~ This afternoon while feeding on a woodrat (skinned) she dropped, accidentally, a ^{small} stringy piece of meat about 4 inches from her, whereupon, without taking any more bites from the carcass, she walked over to this small piece and picked it up, and

Coccyzus sparverius 61

swallowed it, after which she returned
to the carcass and resumed feeding
upon it.

November 6, 1932. When ^{Eard} say "Hello little
cutie" in a particular tone of
voice which ~~Eard~~ ^{we} ~~I~~ ^{both} have
been using when talking to her sp. hawk,
she almost invariably responds
by looking in our direction and giving
the soft little "conversational" che-e-
-e which I have described earlier
(as distinct from the irritative k-e-e-e-
now very infrequent). The bird will
almost invariably respond thus
even if we are in the adjoining
room (^{parlor-dining room} ~~sp. hawk~~ ^{we}), where we
are still in sight. If she is pre-
occupied with flying or looking
out of the window she is likely to
pay no attention whatever.

November 10, 1932 I was sitting in the next
room (dining room), 6 ft from the end
of the cage, today, and when I said
"Hello little cutie" the bird, which was
standing near the end of the perch, by
the cage wires, where E. and I usually

stand, bent her head down and made a dab at the wires, just as she would have done if we had been standing there with our fingers stretched through.

Such is the force of habit! The instant she had done this she turned and flew to perch at the other end of the cage - as though the energy which was unsatisfied by this abortive posturing before a non-existent finger, had demanded a new outlet.

She spends long intervals every morning, and at other times as well, looking out of the window at the sparrows which fly about in the trees, or descend to the ground for food. Often she shows her excitement by taking up a rigid, crouching position on her perch, head bent low, body ^{tail} horizontal, as though about to spring into the air; her head will move from one point of the compass to another following the movements of the birds outside, and if I call her she pays no attention. Sometimes, under these conditions, she gives

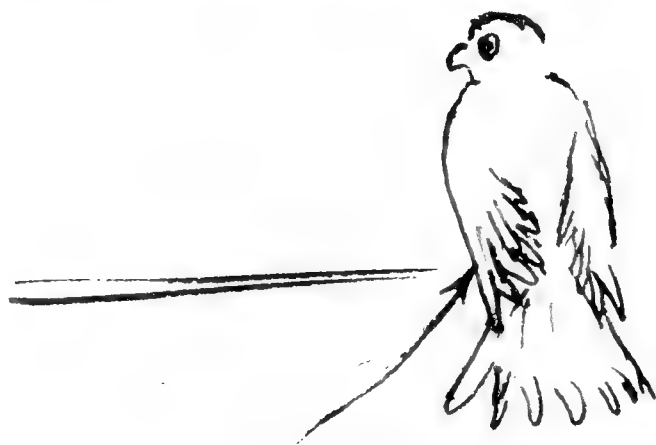
her stident, excited, klee-klee-klee call, as noted previously.

I gave her today a brown towhee [*Pipilo fuscus* (seemingly?)] which was alive and vigorously resistant - as brown towhees usually are, more than most other passerines (as bird banders can attest). In spite of the fact that it was larger and heavier than the golden crowns ~~to~~ which she has been accustomed to catch, the hawk chased and caught the towhee immediately. It flapped about, struggling vigorously, several times lifting both itself and the hawk clear of the ground, but the latter hung on nevertheless. She hit it on the head more quickly than usual (whether accidentally or with purpose I do not know), and at that its struggles subsided. Presently she picked it and ate - and by the end of the day it was as thoroughly dismembered and picked clean as any golden crown.

November 11, 1932

The bird still takes a bath every day or two (perhaps every day? I am not there after 9:30 A.M.), even in

this cool weather. Today, after her bath (in the P.M.), she sat in the one sunny corner of the cage, with wings folded along her back but never the ~~fees~~ ~~partly extended~~ spread, and tail widely spread, thus:



wings are here shown as too short, but extent of spreading is shown clearly.

November 12, 1932.

Today she bathed again, in the morning.

About 5:30 P.M. I noticed that the bird was twisting its head about and gaping in the same way that I have noted here once before (see ante) and have observed without recording many times. Even as I wrote I heard a ^{strange} stifled cry - like the "sneezing" noise one sometimes ^{hears} observes in a chicken - and while the bird was still twisting its head and neck about,

something fell to the floor. At this the bird immediately ceased its contortions and resumed its customary posture - hardly had the object hit the floor, in fact, when the change to normal occurred.

Quérin (La Vie des Chouettes; Régime et Grossesse de l'Effraye commune, en Vendée) describes the act of pellet ejection in various raptorial birds. Some of them eject the pellet "à l'air" during the lapses of the process, and this must be the case with my bird, for there was no pellet directly beneath the perch. (Neither ~~was~~ there any fresh droppings, so that that possibility is excluded). About two feet to the left of the bird, on the floor $4\frac{1}{2}$ feet below ~~was~~ ^{actually} a pellet which although not moist, was, by the softness of its consistency, evidently fresh (at least it appeared so as compared with another, obviously old pellet). This was the only pellet in the vicinity, and must have been the one ejected (it had been too dark for me to follow the course of

Cerchias sparverius

66.

the object at the time of ejection).


This pellet, as well as another examined, consisted entirely of small bird feathers, representing small downy feathers and such which were adventitiously swallowed while the hawk was feeding. Another pellet ~~was seen~~, which fell to pieces upon examination, was composed almost entirely of lizard scales (*Sceloporus*), and a few insect fragments. The insect fragments, mostly beetle elytrae, of course represented what the lizards had eaten.

In the afternoon I gave the bird a *Peromyscus truei gilberti*, alive. The bird was hungry, and approached the mouse to seize it, but the latter was nervous, and frightened, and it leaped about (at the end of a thread, which prevented it from escaping through the wires of the cage). The hawk would run up to within a few inches of it, and then start back a step or two when the alarmed mouse scrambled wildly to get away. Once the mouse succeeded in climbing up onto one

Peromyscus maniculatus

of the perches, string and all and stuck its head and shoulders out through the wire. About this time the hawk pounced down beside it again, and as the mouse could not move, the bird seized its hind quarters with her claws and started biting one of its feet (1). The mouse shrank and struggled and finally backed through the wire into the cage once more, whereupon both fell to the floor, locked together. The mouse may have bit the hawk at this juncture, for she let go a moment later, and would have nothing more to do with it, except to pore about in a circle around it and wage an occasional sham fight with pieces of bones and feathers remaining from previous meals (illustrating in these sham combats an urge analogous to sublimation).

The mouse was accordingly removed and the bird went hungry. About 9 P. M. she

picked up an old jays head that was several days old at least, flew with it up to a perch, and pulling the eyes out, ate them while large maggots  ^{de. notari} dropped down one by one as they were dislodged from the skull. I could smell the head from two feet away quite easily.

Nov. 13. Although the bird had not been fed since the morning of the day before (1 golden-crowned sp) she still would not venture to come to grips with the mouse when I introduced into the cage as before. She would walk around it gingerly, as the day before, and shrink back whenever it moved in her direction. Every now and then she would prance about, grabbing pieces of dried bird skeletons, just as before also. At 1:30, when she still refused to attack the mouse, I killed it and gave it to her. Immediately she stood upon it and began pulling its fur out. In an hour

it was all gone but the stomach,
the fore part of upper and under
jaws, (disembowelled hammer)



one leg (femur, tibia, foot), and the tail.
I gave her no more food.

Nov 14. I have not fed the bird since
the one mouse yesterday. This
morning I watched her swallow
the whole mouse ^{tail} ^{five and all} in one
piece. It gave her considerable
difficulty. First she tried to bite
little chunks from it, but the vertebrae
would not separate one from
another. Then she started to swallow it,
with evident effort, and stopping
every now and then to look about. At
last it had all vanished, whereupon
she flew to a perch and scratched
her head — this being a sign that
she has had enough for the time
being.

At 2 P.M. I tried ~~the~~ a second
live mouse on her, but with
no better results than before, so
I removed the mouse and left

Certhia sparverius. 70

her with no other food. It is funny that she is so afraid of these mice since I have seen her kill and eat them down at the Alp. G. R., this very species.

At 2:15 I watched her trying to extract some nourishment from the mouse by that method. She tried 7 or 8 times to swallow it in one piece, but it was much too long and she had to drop it each time. She tried pulling the femur from the tibia, but the connecting tendons were too tough for her to pull apart. Finally she tore the skin off both femur and tibia, bit by bit, swallowing each fragment, with all adhering particles of meat. This left only the bones of the tibia and femur, and the foot. She gave up, temporarily at least, at this point. I just ^{now} discovered the other hind foot, in a similar condition.

Nov. 15 - The bird did not seem unduly hungry. However, at about 10:30 I was obliged to quiet her the

Cochinus sparverius. (71)

mouse because the latter had become very feeble from cold in its box, and seemed likely to die.

The mouse was now so weak that it merely crawled on the open floor of the cage, shifting about a little when disturbed, but offering no resistance.

The hawk, although very hungry, showed her same reluctance to attack. She must indeed have been bitten on one of her previous encounters. She walked around close to the mouse, every now and then venturing to reach down low and nip his tail or a foot, but immediately backing up after such a maneuver, even though the mouse struggled but feebly. At last, after about 5 minutes, she pounced upon it and holding it down with both feet, while her wings were spread to the widest

and touching the



Ceutharus sparverius.

72.

floor (for support), she bit and ~~tore~~ at the animal's head, in spite of its (very feeble) struggles, until it was dead.

Her tameness, and responsiveness to us has increased markedly, especially to me. Many times each day (I suppose 8-12 on average) E. and I, separately, call to her "Hello little squawher!" and approach her perch, ~~with~~ ^{and put} our fingers through the wires. Not always, but about 80% of the time at least, she will come flapping and running along the perch until she is right up next to the wires where we are. Usually she bows her head, as described earlier, then rubs our fingers, occasionally biting them quite hard. She will give a low chirping ^{sound}, p-e-e-e-p frequently while we are playing with her, especially when we say "hello little squawher" - in fact she has become so habituated to giving her p-e-e-e-p when we say this, that although she is almost entirely silent when ~~not~~ one is paying any attention

to her) she will give the p-e-e-p even when I am sitting at the table 15 ft away, if I call out "Hello ^{of her} little squawker!". This response has become quite noticeable recently. I suppose she enjoys our attentions because they represent the introduction of something new in her consciousness and furnish an opportunity for the exercise of her curiosity (finger nibbling) and perhaps sexual urge (hawing) - that is, so to speak, they alleviate her boredom.

With regard to her habit of Hawing: Yesterday she happened to be on the floor of the cage, and when I put my fingers through the wires, crouched as usual. At this I opened the door of the cage enough to put my hand inside. I found that if I brought my hand toward her, at a height of about 8" above the floor I could get her to haw every time, when the hand was still about 6" away

from her head. When I brought it nearer, however, she would invariably raise her head from its lowered position and with open beak back away, in gesture of defence. Evidently ~~too~~ close proximity frightened her instead of stimulating her libido (if that is what takes place).

Nov 16. To day E. saw her get her wires crossed (i.e. wrong response to a stimulus). As usual the bird came to the side of the cage at E's approach and lowered her head - but when her bill came ~~within~~ contact with the perch she wiped it vigorously, which was not the appropriate reaction as she had not been eating anything and her bill was clean.

This noon I went into the room where the blue birds are kept (entirely out of sight of the sparrow hawk's cage). A brown towhee flopped about inside the cage there and twittered loudly in

Certhia sparverius. 75.

alarm. At these cries the sparrow hawk in the next room immediately began to call for food, although she had been silent up until that time.

Nov. 18, 1932 The ^{apparent} ~~single~~ ^{note} ~~note~~ of the hawk is in reality a series of ^{syllables} ~~four notes~~ - or perhaps one, with the air expelled at four separate but closely spaced intervals; it could be classified either way. The point is that the cree, cree, cree, cree, cree, cree, etc... (until food is forth coming) is really $cree\acute{e}\acute{e}\acute{e}$, $cree\acute{e}\acute{e}\acute{e}$, etc each cree may be represented by the following symbol: ----
the major accent occurring on the last of the four syllables.

Nov 19, 1932 The other day I think I recorded that when E. was playing with the bird and it happened to bow its head (the bowing reaction) so low that its beak touched the perch, it immediately gave the beak scratching reaction, even though it had not been eating. This mixing up of reactions, due to the association of both with the perch, has been observed countless



times since then - in fact it has occurred so regularly that E. has learned how to make the sparrow hawk do it whenever she (E.) wants her to. The method consists in holding the fingers first above the bird's head, so that it will bow (as described previously) and then while it is bowing, moving the fingers down below the perch so that the bird in staring at them brings her head still lower. At this the bill usually touches the perch, and when this happens the scrubbing reaction follows.

It is becoming more and more evident that the hawk now plucks her birds not simply when the feathers get in her way, but in a wholesale preliminary manner. When I described this reaction the first time I inferred that it was a learned one, but I am coming more and more to the belief that it whereas learning may perfect it, nevertheless it is essentially instinctive. The wholesale preliminary manner in which the feathers



are now plucked suggests that the reaction is instinctive. Of course it might be argued that this whole sale plucking represents an intelligent act on the part of the bird, who thus envisages its future needs and so plucks the whole of the bird instead of only enough to expose the meat. I do not credit the bird (or any other that I have seen; possibly the Cornucopia exception?) with this much foresight however.

As a matter of fact not nearly all of the feathers are removed (and many have to be removed during later feeding), although many more are removed than are necessary at the moment.

The reaction may not be instinctive perhaps - on the other hand - ^{but all} some act is possible to conceive of it as a learned habit which is indulged in beyond the ^{immediate} needs of the moment just because it is a habit. Thus in the case of human beings, a similar sort of

reaction occurs in the case where a man unthinkingly picks a much bigger handful of fruit than he can possibly eat.

Nov 22, 1932.

Today I put a known toucan into the cage about a half hour after the sparrow hawk had taken her bath. Although the later was hungry, she would not chase the toucan during the ensuing fifteen minutes but sat, instead, with feathers ruffled up and head ragged, merely watching the toucan as it moved about. After that she began to fly from one end of the cage to the other after the toucan, at intervals, but there was a noticeable sluggishness in her motions. Not until an hour after the toucan was first put in did she commence to give chase with her usual vivacity. The toucan was successful in dodging her for several minutes even after this, showing more presence of mind and more agility than any

79

Cuculius sparverius

~~other birds so far put into the cage.~~
When finally caught ~~it~~ struggled to
so good an effect that at times
it ~~lifted~~ ^{held} itself together with the
sparrowhawk on its back, quite
off from the floor.

The bird shows a distinct
preference for E., as compared with me.
This is something which I have
noticed ever since the sparrowhawk
first began to get playful with
us (see ante), but I have not put
it on record until now because
previously I have not been absolutely
sure of it until now. It is shown
in the following ways:

1. The bird will never go through
the head bawling, finger rubbing, or ^{grabs}
grabbing (with claws) of enemies with
me as readily as she will with
E. She starts them only after
hesitation and quickly tires.

2. When I am not able to
get any of the above reactions out
of the bird at all E. will come to
the cage wire and get them in
mediately, the bird frequently

leaving my side of the cage and flying precipitately over to E's side
 3. When E. and I stand on opposite sides of the cage, playing with the bird, it is only with the greatest difficulty that I can get her to come to my side if she is over at E's; but if she is at my side E. can make her come to her side instantly by calling and jiggling the perch in her usual way. Is this preference due to differences

November 23, 1932

in tones of voice which we employ, and similar mannerisms; or is it due to some psychic quality, which adventures E. as having a more ~~benign~~ benign nature than I?

November 23, 1932

This evening at about supper time I actually saw a pellet being expelled - at last! I happened to notice that the bird was jerking her head rapidly in a dorso-ventral-anterior-posterior direction



stage 1 stage 2

and while I was looking out popped

a pellet during one of the jerks, whereupon the contractions ceased. The pellet was moist enough to be shiny with moisture, and was composed, at least externally, of bird feathers.

November 24, 1932 Alp. B. R. Today I put the sp. hawk into her new 10' x 10' x 6 1/2' pen. She did not seem to know how to act in such a large ^{confined} unconfined area, however, and merely walked about on the ground where she had been liberated without attempting to fly for some time. While she was still on the ground I approached her (inside the cage) on my hands and knees, and offered her my fingers in the usual way. She nibbled it as usual, without any uneasiness. A moment later, when she was perched on a branch inside the cage, I called to her, "Hello little sparrow!" in the usual way, whereupon she left her corner of the cage and flew directly to my shoulder where she perched and preened and bawled. Perhaps the fact that I was the only familiar

object amid all this strangeness
had something to do with her
unusual tame ness. In any event
she showed none of the hostility
that the horned owls did (see
my article) when they were released
out doors after having been in
the laboratory for weeks. To be
sure, the conditions are not
strictly comparable.

Just at dusk she showed uneasiness
and a desire to go to roost by
flying about inside the cage, and
clinging to the wires of the sides.
She had not yet discovered the
roosting shelves which I had
made for her. As it got darker
she flew with a hesitating, hovering
flight, sometimes bumping into
things. At home (Oakland) I
have seen her unable to find
her roosting perch, whenever I
have carelessly turned off the
lights in the room without
first taking her to the perch.
This evening I finally picked
her up and placed her in the

Coccyzus sparverius

roosting shelter, where she remained and roosted. Surprisingly enough she offered no protest when I picked her up, except to give a ~~he~~ ~~error~~ when I placed her on the perch and she lost her balance momentarily.

She has always had wooden perches until now. In this new cage I have nailed several dead branches, and when she alighted on these she stared at them fixidly — at the point where she had hold of them with her feet — several times



rotten
branching,
but the
idea.

This

indicates the well developed powers of discrimination, and the curiosity of the birds.

Nov. 25. I observed the bird to fly down ^{to the ground} and start to bite some small object, after which she shook her head once or twice and let it alone. It proved to be a carrion

beetle (*Sylpha* sp. I think, it has been saved). Later in the morning I offered her a millipede. For a while she paid it little attention, apparently because ~~she~~ was not hungry. Eventually, however, she went to it and bit its head and several segments off. Immediately she shook her head (whether she swallowed or merely tossed to one side the portion bitten off, I could not tell), backed away, and would have no more to do with the millipede.

Nov. 26, 1932. Same place. 11:45 A.M. On hearing an excited, continuous klee-klee-klee-klee cry from our hawk, I looked out and saw a ♂ sparrow hawk sitting in a willow 60 feet away. In a moment he sailed over to the sequoia trees by the cage - graceful as a dream, and putting to shame the labored beating of our own sparrow hawk. All this time our hawk was staring up at him, hopping from limb to limb, and screaming klee-klee-klee

erectly. A moment later he had alighted on the top of the cage itself, and peered down inside intently. The tame sparrow hawk, meanwhile, was clinging to the wires of the cage, right below him, grabbing at him with her feet just as she has been doing with us — I don't know whether from "passion" or hostility. A moment later he flew to the roof of the shack, where he remained until I frightened him by sticking my head out the door. At that he flew away toward the boat-house, calling hlee-hlee-hlee in a high pitched voice — not really higher pitched than that of our bird. She continued to call hlee-hlee-hlee at intervals for a long time thereafter.

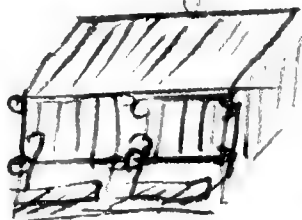
2:46 P.M. Heard the chorus of alarm cries which Audubon's make at the approach of a hawk, also the "scream" cry of the Q. D. quail, and looking out, saw the ♂ Hawk again.

Certhia sparverius

86

The ^{the top of} unmarked perched on a tall
conifer for nearly an hour, silent.
Evidently he was afraid to approach
us on account of my presence.
Our ♀ made the welkin ring with
her blue-bleen.

Nov 27 - 1: P.M. E. tells me that the ♂ sp.
hawk was back again at this
hour, perched in a willow about
100 feet away. Our bird was yelling
her head off as usual. The wild
hawk discovered a golden crowned
sparrow in the bird trap which
I have over there beneath the
tree, and somehow he managed
to catch the bird through the
wires, kill it, and eat it, all
but the head, which may
have been left because it
could not pass through the
wires.



5/16" apart.
tipped over.

(wires about 1/4"

E. said that during the rest of
the afternoon our bird would
pay no attention to her when she

spoke, or put her fingers through
the wires, or did any of the other
things which usually aroused the
birds ^{play?} ^{both?} reactions. I remarked
the same thing the day before; she
certainly was distraught. Also,
whether this has anything to do
with it or not, she has been paying
very little attention to food ever since
the appearance of the wild hawk —
only part of a bird all day, the
mouse which I gave her ^{at 10 P.M.} being
quite untouched.

Nov 28. Was away from yesterday, 5 P.M.
until today at 2:30 P.M. The first
thing that I heard as I came
within earshot was the blue blue
blue of the ♀. If the wild hawk
was around I failed to see him.
I gave the bird a mouse, but she
merely hid it in a corner. Yesterday's
mouse was eaten, though.

Nov 29. The bird's appetite is still poor.
After I gave her a mouse today,
which she refused to take, I discovered
that yesterday's mouse was still
untouched. She has done her

calling today, but then it has rained steadily so that she has had to stay inside her shelter most of the time.

3:45 P.M. Saw that she has eaten part of the head of one of the mice - and then tucked the rest of the body into one of her storage cracks.

I forgot to mention that on the 26th there was a smaller (smaller than I have ever seen before) flat fly upon the ^{top of the} head of our hawk. It escaped each time I tried to catch it, however.

Later (5 P.M.) I saw the sparrow hawk eating ^{up} one of the mice some more.

Nov 30, 1932 I forgot to mention that the other night I discovered the bird sleeping with her ^{large eyes} ~~head~~ under her right scapulars. Usually she wakes up and flips her head around before I can get close to her with the flash light.

The bird ate one of the mice during the day but not the other. Her whole cere is a bloody mass

on top, and her frontal feathers are rubbed away exposing a bare space, as a result of her banging her head against the cage wires. I suspect that this unusual activity (head banging) was caused by the trapping of the two cooper hawks on the poles erected above her cage (see under *Accipiter* for this, p. 17).

To night I saw her with her head tucked under her left scapulars.

Dec. 1, 1932.

9:27 A.M. She drank seven sips at the water dish, in spite of the fact that it is still cold, and wet, and muddy, after the last 4 days of rain. The quail did not drink this morning.

Dec 3 - Saw her drink at 9:20 A.M.; don't know how many sips; also one sip at about 9:05 - tho in spite of the fact that it is cold and muddy (although sunny) following the storm mentioned above.

9:27 - She took a bath in that icy water in her dish, and is now sitting in the sun, shivering slightly.

and very bedraggled.

Today the bird saw E. for the first time since a week ago. At the first ~~approach~~ ~~movement~~ she spread her wings and flew to the other end of the cage. At E's second approach I was already beside the bird, talking to her, but she spread her wings and ran away, along her perch, as E appeared. At E's third approach she emitted recognition, however. As of old, she bowed her head, and struck through the wire at Ethel. The striking through the wire and her manner of climbing up the sides of the cage were just like her actions in the presence of the 3 sparrow hawk, as previously described. Later, when Ethel went inside the cage, the bird flew to her and dug her claws into her ^{arm} biting her arm and fingers at the same time. The bird has done this before to Ethel, but not to me. The action does not seem to express hostility. I think she would do the same to another hawk if she could get to it. The action represents, perhaps, her idea of

obtaining something, of getting it into her possession. It signifies, if this interpretation is correct, a "come to me, I want you!" feeling. She has been accustomed to get possession of birds (sparrows) in this same manner, it should be remembered.

~~next~~ Tonight we took her home from the Ranch, after a week down there. When put inside the small carton which is used to confine her while in the automobile, she showed no fear or uneasiness at all, but chirped as usual when we spoke to her, and even ate about half of a spatch of turkey which was put in with her.

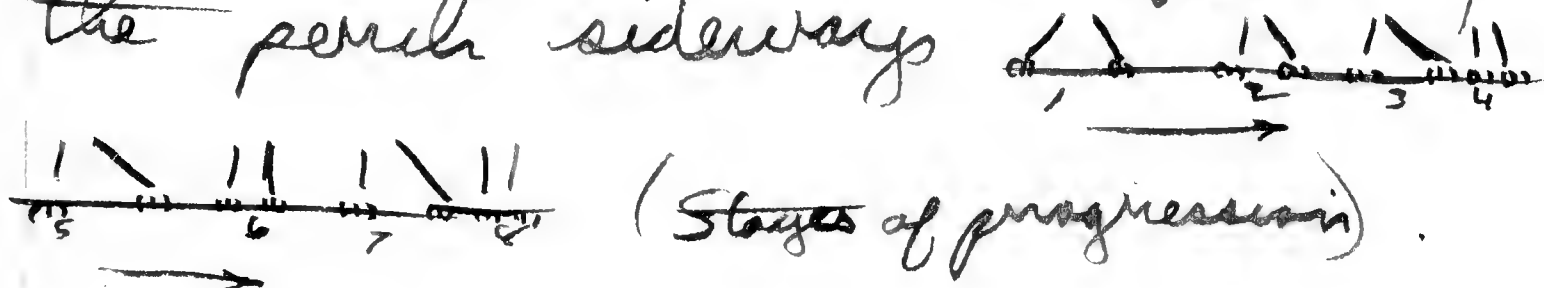
She is molting extensively. Feathers may be seen in her alp. c. p. cage. By blowing her breast feathers apart one can see many pin feathers, there is also a replacement going on on the top of her head, and on her neck. She has been seen to preen and bring her bill away with two feathers adhering to it, then

flashing to the ground as she shook her head. Ethel blew upon her wing tonight and dislodged a feather each time. She has present a ~~quite~~ untidy appearance for a week at least, especially around the neck and shoulders, but I did not realize until now what the cause was.

December 5, 1932. She certainly is molting; feathers drop off almost every time she preens herself.

This evening about supper time (?) I heard a little stifled screech from the bird, such as I have heard once or twice before. This time when I looked up I knew what to expect, however. Sure enough, the bird was violently bobbing her head up and down, with a motion such as one might expect to see in a bird that was vomiting. Suddenly, in the midst of these contortions, I saw the pellet thrown out (to a distance of about 2 ft by the time it hit the floor, 4½ ft below). Immediately the bird regained her customary composure.

At 9:30^{P.M.}, when I turned off the light, the hawk was perched near the middle of one of the perches. I have noticed that she always roosts next to a wall, or cage wire. Sure enough, as I stood there in the dark I saw her stretch her neck and bob her head as she peered about and a moment later I watched her shuffle along the perch sideways.



until she got over to the extreme end where she was touching the wire. Here she settled her self for the night. I should call this posture thigmotaxis, if it must be named. It is a question as to what must be the effects upon the constitutions of birds which like ours, are deprived habitually of their normal amount of sleep. The sun sets at 5:30 at this time of year, which would therefore be the birds' normal bedtime. However we do not turn the lights off in the room until 10 P.M. During

this time our hawk is more or less quiescent part of the time - although not asleep, and part of the time she is actually "pattering" about on the floor, or flying from one perch to another, or preening. Of course in the morning she is up at daylight, instead of observing our awakening hours.

When she is at the A.C.P., she goes to bed at the normal time. Dec 6, 1934. I notice - in fact have noticed it for ten days or more, only was not sure of it previously - that when I ^{come out} ~~go into~~ of the room where the sparrows are kept (this room is out of sight of the hawk), and slam the door, the hawk is always alert to the noise. Probably the sounds of the sparrows fluttering - audible just before I slam the door - re-inforces the stimulus. At any rate the hawk will be either calling for food, or else clinging to the wire of the cage, waiting for me, before I turn

came in sight, following my
quitting of the sparrows room.

Yesterday and today she hurried
much more skill in the catching
of sparrows than previously. In
each case she grabbed them in
the air at the first dash, even
turning upside down to catch
one of them as it fluttered at
the ceiling of the cage.

December 11, 1932. The bird is certainly
moulting! The whole back of her head and
neck is bare - save for the closely matted,
short, new, growing pin feathers. Most
of her forehead and much of her
breast and upper belly is in a similar,
although less aggravated condition.



← some indication
of the bird's head and
neck condition.

Of course this wholesale
loss of feathers isn't normal,
but I'm not sure as to
the cause. To be sure the
bird has had very little
insect food; practically none,
and has lived almost

entirely on birds which is reversing the usual diet ratio of the species. While she has had quite often. Sunlight she has had most of the time except recently; bones she has had in profusion. Well, the new feathers are sprouting, at least.

This morning E. saw her eat an entire foot + tarsus - metatarsus + tibio-tarsus of a golden crowned sparrow. Two or three times she got it half down only to pull it out again, but at last with much straining she succeeded in swallowing it entire; the foot was the last part to disappear.

Since about three days ago she has begun to give the old annoying food call whenever we enter the room after an absence of an hour or more. She will call thus even when she has just been fed, since she has the "mood." Accordingly I have been using the water squirter again. It is noticeable that she recognizes the object. After she will stop her squawking

as soon as I approach with it, and almost always she will squat a little lower on the perch, with feathers compressed against her body, as soon as she sees me bring it forward. One squint is usually enough on the occasions when she still persists in squawking in spite of the approach of the squint gun!

This noon I heard a breezing sound and glimpsed her just at the end of the plover, her head was just coming to the end of a side wise jerk that marked the termination of the breeze. I had saw her do this once, some time ago.

Today and yesterday - co-incident with a noticeable progress in the growth of new feathers - she showed a marked increase in appetite. This was especially noticeable today, when she cried for food until she had been fed three large meals of raw meat (^{200 gms} ~~each~~ meals, amounting to the size of my two thumbs; one of the meals amounting to the size of one of my thumbs). In addition to this she

Had a fourth large meal (size of the largest of the other three) from a piece of meat left from the night before, ~~plus~~ plus the sparrow mentioned earlier.

This is at least twice as much as she has required on average days during the late summer and the fall, and is 3 - 3½ times as much as she ate at the Alp. Q. P. a week ago when the ♂ sp. hawk was about. Evidently active molting stimulates the appetite.

The bird certainly knows when she is being talked to (that is, when someone is saying "Hello little squawker" instead of something else). To night I was talking to Ethel and in the midst of conversation I said "Hello little squawker"; in the usual tones, where upon the bird, heretofore silent, immediately answered with her usual p.m.e.e.p. Probably it is the tone that counts. I must try some experiments to find out.

December 12, 1932. This morning when I gave her some food she showed the spreading reaction in particularly perfect form. Not only did she crawl over it with lowered head and partly spread wings, but



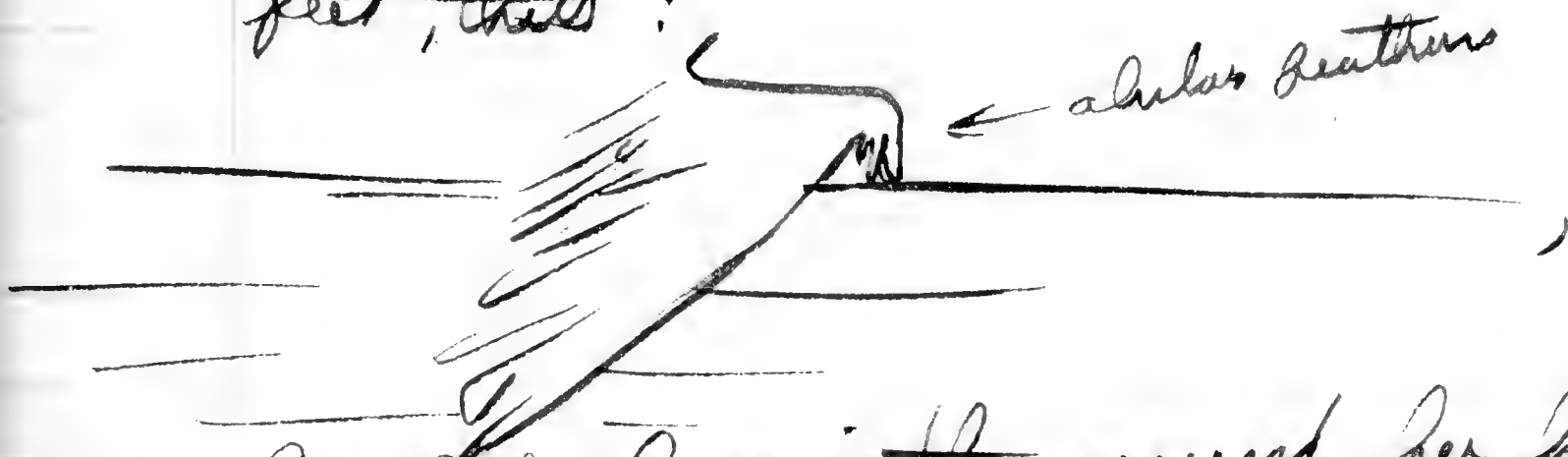
she crawled about, belly (practically) to the ground, as I pursued her, dragging the meat beneath her and saying *he-roo* — and once when I put my finger near she hit it sharply.

Here is an instance of habit: Before I took her down to the Alp. C. R. R. this last time, for a week's stay, she always roosted in a particular corner at the window end of her Ophland cage. When brought back from the Alp. C. R. a few days ago, however, she happened to be at the other end of the cage when we

turned the lights out (I described this under "thigmotaxis" at the time), and there she spent the night close to the cage wires. Every night since then she has roosted at this same end, away from the window. Evidently the part of her former habit was broken by a week's absence and this, now, and opposite, one has taken its place.

I mentioned recently that she gave me a decided nip when I ventured too near while she was covering her prey. To night this turbulence was much more pronounced. She would make sudden grabs with her feet, and vicious thrusts with her bill, whenever ^{E. or I} ~~one~~ put ~~our~~ ^{our} fingers within 6 inches of her. This aggressiveness was so strong that she would even make a little run at the intruder, often from as much as a foot away; in fact I proposed that I could "toll" her completely around three sides of the cage by keeping just ahead of her rushes, and this I succeeded in doing. Surprisingly

enough, she made no sound during these attacks. She would crawl over her prey (a brown toad) until it was altogether hidden (except for a bit of its long tail, which stuck out behind), and she ~~would~~ dragged this about under itself for during the whole time. Part of the time at least, she locomoted on all fours, using her wrists ^{and elbows} as the fore feet, thus:



her belly hugging the ground, her head low, and her tail wide spread.

Several times she flew at Ethel from the opposite side of the cage ^(not) dragging the bird beneath her, but on these occasions it was difficult to tell whether ^{or not} she was motivated in part by the habit of responding to Ethel by flying to her. After she had got there, she would crawl over her prey as before and act in a hostile

manner, but it may be that she got her wings partly crossed as shown by her approaching from so far away. Twice under these circumstances she said pr-ee-p, which tends to confirm the idea that she was partly motivated by the habit of approaching for play purposes.

Dec 18, 1932. Her bill which she grazed so badly on the wires is quite whole, except for a pinhead scar. Her new feathers are so well sunned out that she no longer looks like a scarecrow. The breast and chest feathers are nearly complete in ~~development~~ ^{development}, so that if they are not parted to show the bases, the plumage looks completed. The head feathers, especially on the forehead are much farther behind, but even there she no longer looks naked.

Another indication that she knows when she is being addressed. While eating, if I suddenly call out "Kelly, little squawher," in the usual tone

she will spread her wings over her prey, even when I make no move to approach her.

Dec 2, 1932. Here are two things which should have been written earlier.

(1) The bird behaves toward Mrs. Lueders in the same way she does to E (that is, coming quickly to the cage when called, and striking at the offered finger repeatedly). As remarked before, she never does this to me (unless I stand right next to E and offer my finger after E has got her excited, in which case she sometimes strikes at me and nibbles at it but almost immediately stops, evidently noticing the difference).

(2) ^{now} She gives her pre-emptory grating whenever I talk to her (unless she is distracted by something, or is reaching over her food), but practically never gives it to E. This difference in her reaction has been strikingly shown in (about) 6 experiments which we have made during the last

twenty four hours. During each of these experiments E. and I took turns (alternating 4-8 or 9 times during each experiment) coming up to her and talking to her. In every case she said preep to me but not to E., although we both spoke to her in the same way. I would speak to her and she would say preep, then E. would speak to her but she would make no sound then I would speak again and she would say preep, then E. would talk to her but without result - a dozen and more times consecutively. The only time E. got her to preep was once, the first thing this morning, when she visited the bird at the time we are accustomed to get up. I had not yet appeared at all, and the bird said preep several times then - but at no time later in the day, although she would answer me from across the room. + Since I wrote this we have tried it again, always with the same result, unusually a

Certhia sparverius

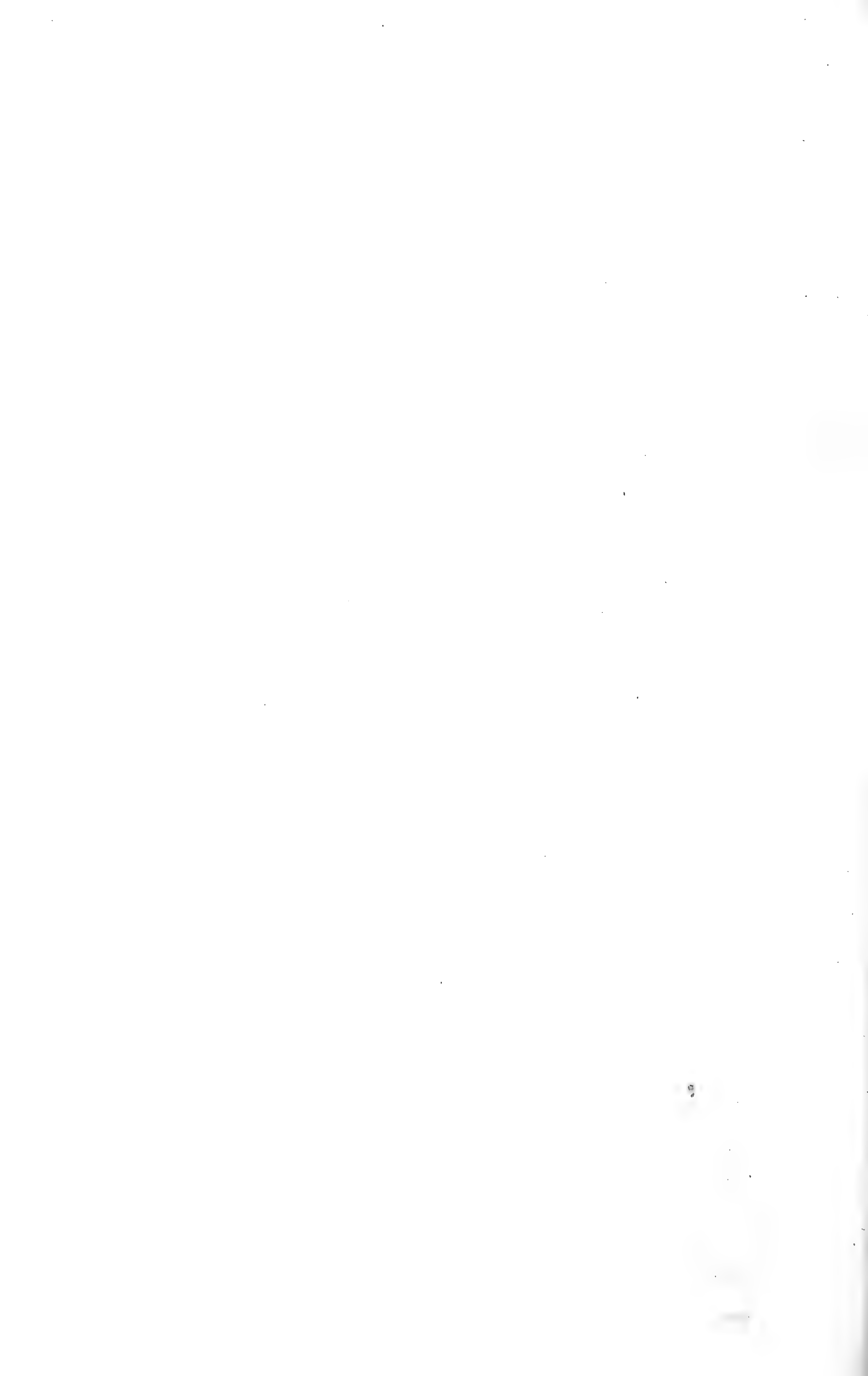
105

prey for me, but none for E.
What the cause is of this I don't know.
Dec 21, 1932. She has for sometime
seemed to recognized that the slamming
of the pantry door (entirely out of sight
of her and separated by two doors),
followed by the rustle of paper, meant
that she was going to be fed on
raw meat. But I have not put
it down before because I was not
sure. Her begging cries, following
immediately upon the slamming
and rustling mentioned above,
have taken place so many times
in this way that there can be no
mistake about the connection.
Sometimes for a week or more
at a time, we have enough
birds so that we don't have to
buy meat, which means that
there is no sound of slamming
doors or rustling of paper, and no
opportunity for her to learn this.
This makes the fact that she has
learned from infrequent exper-
ience all the more striking.

Dec. 29, 1932. Ventura Co., Calif. near Ventura.
Ethel saw a sparrow hawk chasing

some small bird, as she was chasing
by. The hawk was about 10 feet
behind the fugitive. She did not
see the outcome of the chase. Some
before this, about a year ago, she
saw a similar incident.

Jan 7, 1932 The hawk can see at night about as
well as a human being, I feel sure.
Tonight was a more than usually
brilliant moonlight night; not only
was the landscape bright and clear, but
even in the shade of objects it was
light. The bird was on her morning
perch as usual, but when I came
by (at about 8 P.M.) she hopped
down onto the shelf below. I gave her
a mouse, which she grabbed and
hovered over, as in the daytime,
even running away from me
into a corner with it. After I
went away she commenced to eat it,
and ^{3/4 of an} hour later ^{when I went to bed, she} was still feeding
upon it, jerking off large pieces and
swallowing them as usual. I stuck
my head in under the shade of her
shelter and found that I was unable
to read 10 faint type (capital letters)



at the place where she was feeding, even though I stared at it at close range. I could make out the mouse distinctly enough, however, just as the bird evidently could.

Her attempt to cover her prey with ~~the~~ out-spread wings is as marked as ever (see ~~ante~~ ^{to some people}). Today, when I was demonstrating her habit of making actual rushes at an intruder, I carefully allowed her to get hold of me. She showed real ill temper, for she hung on with ~~but~~ her one free ~~foot~~ ^{foot} and repeatedly dug and bit the back of my hand with her bill until the blood flowed from four or five small cuts.

Jan 15, 1933. The bird must certainly have caught and killed a *Microtus* all by herself today, for I found one dead, head wrangled, in one of her regular staring places this afternoon. It is certain that no one else has been around to feed her. There are several mouse tunnels around her cage, the mice no doubt being attracted by the feed which

Certhia sparverius 108

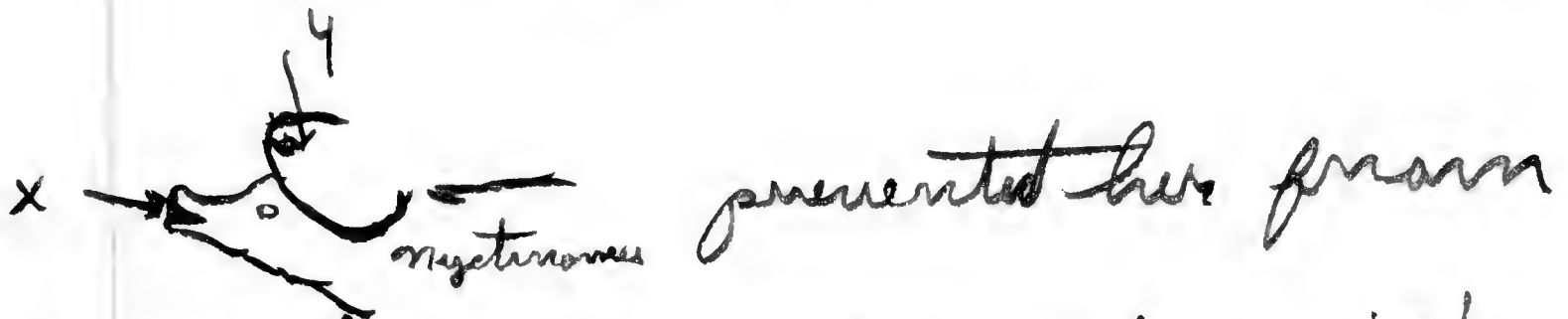
I ~~seats~~ inside for the captive sparrows.

Jan 20, 1933. Back in the house once more after an absence of about 20 days, during most of which she has seen neither of us, the bird is taking up ^{her} ~~the~~ cage life without any sign of losing ^{her} ~~the~~ old habits. Fortunately she says pre ee ep to me, but not to E (except occasionally the first thing in the morning) as before, and she grabs at E's hands and responds to E's calls with an eagerness which she seldom shows to me. So, too, she runs - or even flies - directly to me when she has prey, and upon reaching me she crumbers over the prey with lowered head, spread wings and expanded tail, and flutters vigorously if one attempts to touch her. This is as it was before, too.


Occasionally during the last ~~two~~ months she has suffered a return of her old, exasperating

habit of giving the food call at very approach even though she has just been fed. Apparently the association with the water punishment which I had instituted, ~~she~~ has begun to wear off. Accordingly, I have not wet her each time she has given this call (except when she was obviously in need of food, which doubtless has retarded her learning), but she still gives it not infrequently, although not with anything like the frequency of her nesting days.

Jan 21, 1933. Today I gave her a bat (*Myotis mexicanus*), when she was quite hungry. She attacked it without hesitation, catching it in mid air as she does the sparrows, but its unusual shape subsequently gave her some difficulty. Although she was partially successful in identifying the head end while trying to kill it, the prolonged snout and the wide, flaring ears,



reaching the vulnerable point (brain) and quickly dispatching the animal. She would bite at the hard bony snout (x in the figure) and at the tips of the ears (y) without affecting the swimming animal except to make it squeak vociferously. About half the time when she would lower her head to bite the bat's head, one of its folded wrists

would be in the way,  and she would bite that instead. In

fact while the bat was still partly alive, although gashed about the head, she concentrated upon one of these wings and tearing off sections of it piece meal, swallowed it bit by bit - dropping a few of the longer bones but eating most of the membranes and all of the muscles and tendons - until the wing was all gone. This was not a nice spectacle to watch. In about an hour she had

eaten the whole lot, for not a trace of it could be found. Of course, bats have been observed as prey of sparrow hawks in nature (George Wright; also someone else).

She still retains the association of food with the sound of a rustling of (meat) wrapping paper and the slamming of a (pantry) door, as shown by increased and more excited begging at such times, even though the person bringing the food is not yet in sight.

January 27 - at Oakland. She took a bath in her dish about 11:30 A.M. (Cold, rainy outside, warm within). Afterwards, while she sat all wet and bedraggled on her perch, I put my nose up until it touched her and could detect a slight "mushy," ^{birdy} odor. In the afternoon, when her feathers were dry I could hardly detect this odor at all even at the closest range. The water in which she took her bath, by the way, had not been changed for more than three weeks, and had a ^{slight} ~~slight~~ ^{characteristic} layer of

dust on its surface, but this did not deter her.

Feb. 6, 1933. Alpine Creek Ranch. Today, like the preceding four days, has been warm, sunny, and spring like. Red tails are apparently courting (see *Buteo l. calurus*, p. 138), and perhaps sparrow hawks do too, although usually nesting later. At any rate, my attention was attracted at about 6 P.M. (early dusk; quail bed time), by a high-pitched hlee, hlee, hlee, up from down beyond the Los Pinos Road. I thought that I recognized by the tone, the voice of the wild ♂ bird mentioned often previously; certainly the tones were higher pitched, ~~than~~ ~~than~~ those of our tame bird. He was diving, in fifty foot loops, at the top of one of a clump of pine trees, repeating the chiee ones and ones, and hlee hlee hlee up at the top(s) of each dive.



I could see no other sparrow hawk there, hammers, which might have been the object of his display. After a few minutes he moved ~~300~~ 400 yards up hill to the big valley oaks on the open hillside where last year the hawks raised their young. Here he sat, on the topmost dead branch (a favorite perching place, I have noted, for this family) and continued his calling. His call ~~(perhaps that of)~~, unlike that of our bird which varies in the number of hlees, was always made up of four hlees:

hlee hlee hlee hlee, the emphasis being greatest on the first hlee. He did one thing which I have never noted in a sparrow hawk before, namely, he varied the rate of utterance from fast to slow and back again; one moment he would say

| hlee, hlee, hlee, hlee | very slowly
 ← 1 1/2 sec. →
 and then again it would be

← 3/4 or 1/8 sec →
 hlee, hlee hlee hlee

The sparrow hawk, or pair of sparrow hawks I think it is, still lives on the vacant subdivision tract on the outskirts of Menlo Park, at the end of Dumbarton Bridge. Too many times to enumerate, in fact nearly every time that I have made the trip to Alp. Cr. Ranch from Oakland, and back, I have seen one of them at least perched on the telephone wire, or on a ~~foot~~^{post} (unused) street lamp pedestal, or in an oak tree. The playful family of ~~last~~ August 1931 apparently is reduced to the original pair, again early in the fall of each year.

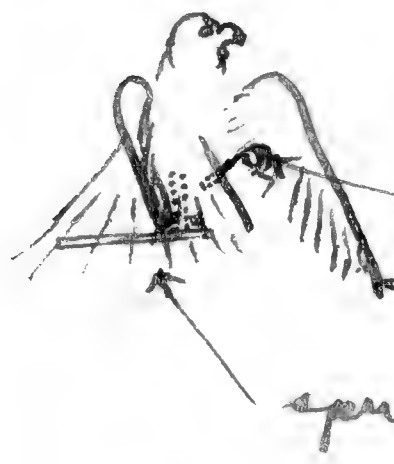
Feb. 10, 1933. When Sherry ~~has~~^{was} time lived back home after a week or so in comparative solitude at the Alp. Cr. R., she shows some tendency to revert to her old, teasing-for-food habit when she isn't hungry. I keep the squint on hand for such occasions, and here she ~~shows~~^{offers} another example of automatic behavior as follows: When she cries ~~and~~ I seize the

squirts and point it at her. At this she almost invariably shuts up, so that I have no opportunity to direct a jet of water at her. However, while I stand there, squirts aimed and menacing, she will press her feathers close to her body (making herself look thin, thin), stretch her neck, shake her head in the manner of getting rid of an offensive object (the head shaking is sometimes omitted from these action chains), shuffle along her perch sideways (to avoid the non-existent streams of water), and invariably half open and shut her mandibles in the sort of pseudo-drinking motion which she goes through when her face is doused with the water.

Feb. 12, 1933. In addition to the above reactions I noticed today that she fluffed out her feathers as she dries when she is wet, and after half opening and closing her bill in the usual way, she wiped on the perch, as she does when it is wet.

Today I observed her to stretch in

a whole sale manner. She spread her tail wide, her ~~to~~ right wing, and, ~~clenched~~ (standing upon her left leg) her right foot, thus



(this is supposed to be a view from the back!)

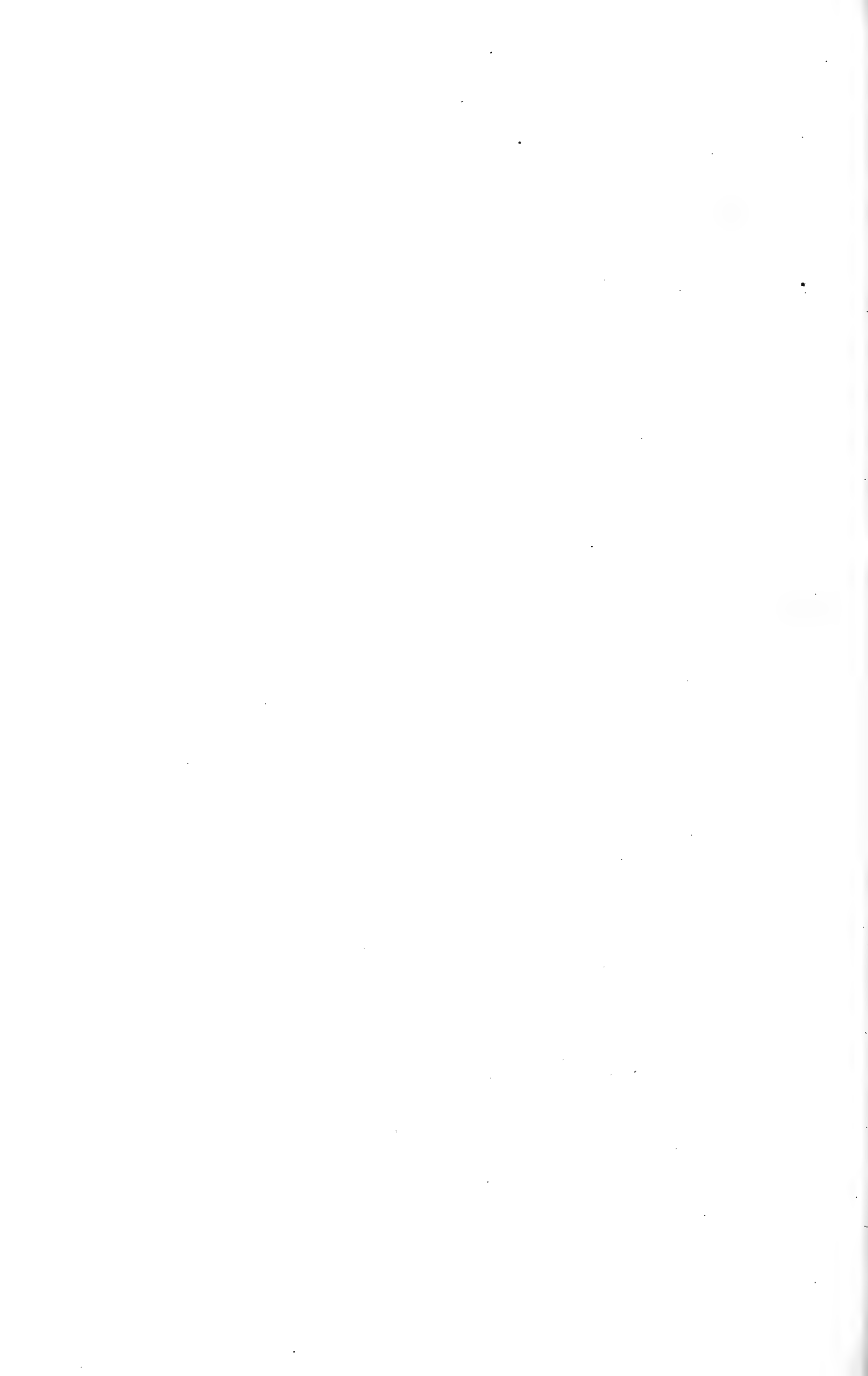
clenched foot, drawn up, not extended
extended wing
spread tail

She still behaves toward me and toward Ethel in her characteristic manner, reacting to each of us differently, as described earlier. When I approach her perch she says preep, as usual, and if I gesture, or call her, or otherwise particularly attract her attention (or sometimes without any particular urging on my part) she comes running along the perch — not side wise but, placing one foot in front of the other at each step — with neck outstretched and preeping. But, when she gets within about three inches of my outstretched fingers,

thrust through the wires of the cage, she almost invariably stops, and remains there, looking at me, and preening, and contentedly preening herself, but coming no nearer. With Ethel, or Mrs. Lueders, on the other hand, she tries to reach to them with her claws.

The other day I again saw her ^{young} once.

Feb. 13, 1933. To night I brought a large tom cat into the house and gave it something to eat so that it would remain in front of the sparrow hawk's cage. As soon as the hawk saw the cat she became much excited, standing with all her feathers pressed down flat, and neck stretched out, calling hlee hlee hlee in ^{an} ~~unusual~~ ^{unusual} rasping, ^{tone of} voice which betrayed her nervousness. She flew back and forth in the cage, flying excitedly against the ~~to~~ wires, too, and when E. and I (even E.!) came up to her cage and called to her in the usual way, she would not preep in answer, or come near to us,



but would only call blue blue blue
in the same happy, abrupt staccato
voice. As for the cat, when it
first came near the cage it
sniffed inquiringly, but at the
commotion raised by the sparrow
hawk its eyes grew round, it
glanced about nervously, and then
crept furtively out of the room.

It is pretty certain that our bird
has never seen cats (unless once,
a feral one, at the Alp-Co. R.) before,
but her apprehension was manifest.
However, she has shown the same
sort of apprehension at the sight
of dogs, and horned larks, so that
the response though instinctive,
must be non-specific.

Feb. 14, 1933 - Mills College, Oakland, Calif.

That says that four sparrow hawks were
making a noticeable commotion
on the campus today, flying about,
diving, and calling blue blue blue.

Looks like courtship activities, I thought.

May 10, 1933. When given a chipmunk
(*Eutamias*) she behaved as she
does with woodrats, i.e. she

paid no attention to it, ^{after a preliminary stare} so long as it had the fur on, but ate of it freely when the fur was removed so as to expose the meat.

There were fly maggots in the head of the chipmunk, but these did not deter her.

March 14, 1933. It seems likely that the molting wing feathers (and other molting feathers also, for that matter) of hawks in general (and probably other birds as well) do not simply fall out, but are pulled out as soon as they are loosened, by the preening activities of the bird. Our sparrow hawk in preening her wing feathers, grasps them near their bases with her bill, and then draws her bill along them slowly and with a harsh scraping sound until the tips pass out of her bill. She takes only one feather at a time



The feathers, and entire wing, remains stationary, whereas the bill does the moving.

She always carries her prey, when flying, by one foot, never in her bill, or with both feet at once. The foot carrying the prey is usually dangled more or less straight down. These remarks apply to heavy prey like sparrows; how she would manage grasshoppers and such small deer I do not know.

I believe I have mentioned previously some of the objects of ~~that~~ which she has shown fear — a change of apparel on E's part; strangers in general, particularly men; a cat; large birds, and wood rats, when held close to her, a pair of light colored kid gloves worn by E. None of these (except possibly the gloves) can be considered as acquired fears; they evidently represent an instinctive response to strange objects (see *Lophortyx* p. 497). At the time she was taken from the nest she could have learned no fear associations from her parents,

either.

March 19, 1933. She accepted a small frog, evidently a true frog, from my fingers, but after one or two bites, dropped it and opened and shut her bill several times, after which she accepted it. When I offered her the frog again she flew away, dropping a bird carcass in her haste. Shortly after this she accepted and eagerly ate a jerusalem cricket (*Stenopelmatus*), this being the second one that I have given her in recent days.

March 20, 1933 Today put a Calif-jay into the sparrow hawk's large cage at the alp. Co. Ranch. At first the hawk flew after the jay, but the latter easily eluded her. The jay, being afraid of us onlookers, kept flying here and there trying to escape, and in the course of its endeavors, kept frequently flying directly toward the sparrow hawk, sometimes alighting near, or almost on top of the latter. The approach of the jay always caused the hawk to fly away nervously, and soon she gave up trying to

catch the former entirely. So strong was association (apparently) that when five minutes later I introduced a golden crowned sparrow into the cage (the jay still being there) the hawk made no effort to catch the sparrow either, which was entirely unlike her usual behavior. That afternoon I removed the jay, leaving the sparrow inside the cage, but it was not until twenty four hours later that the hawk finally chased and killed the sparrow.

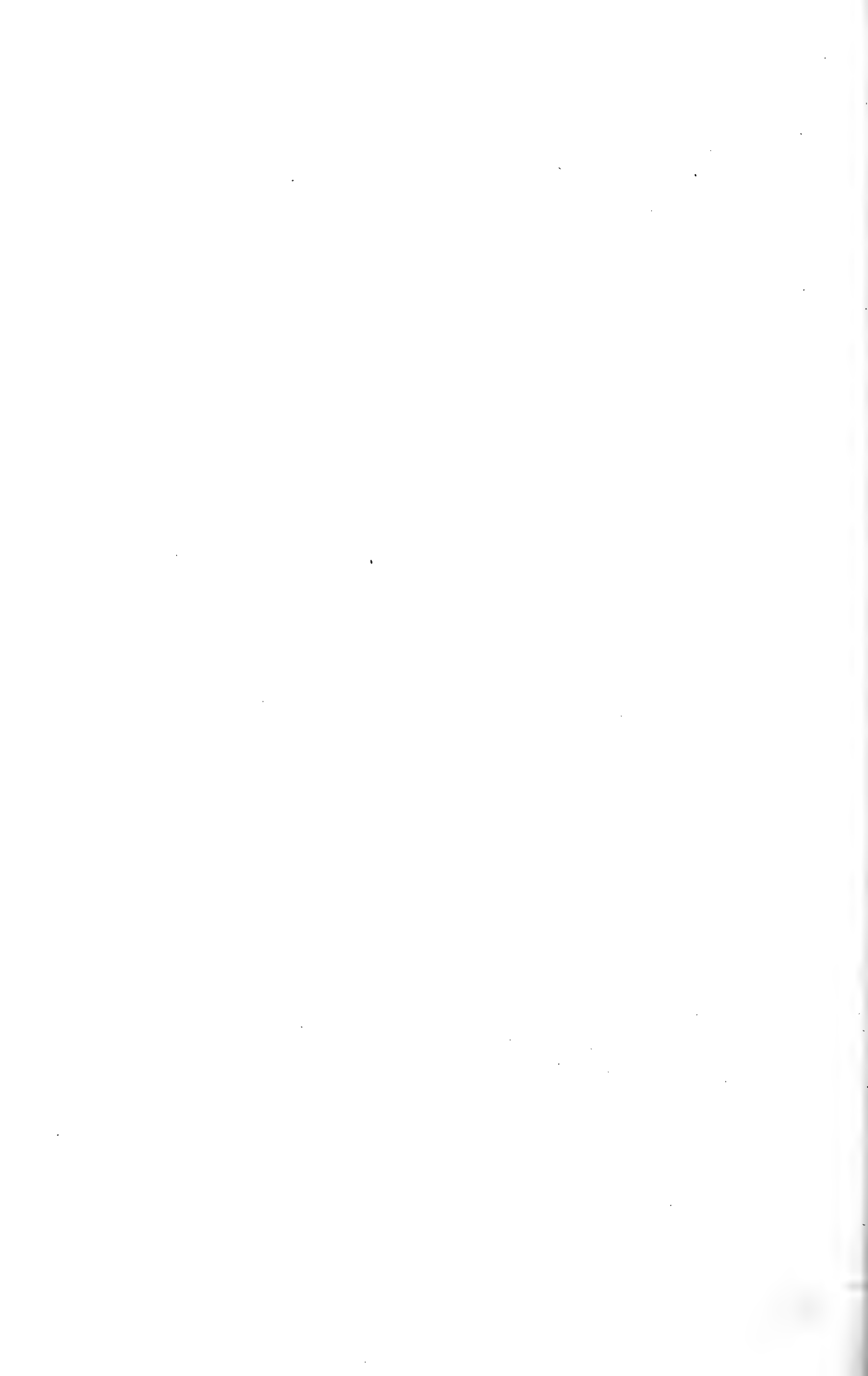
March 22, 1933. She is afraid of Paul Shaw, as she was of Leo Wilson, and Mr. Lueders, all three being strangers to her. She not only flies away nervously when she sees strangers, but will not even approach me under such circumstances.

April 13, 1933. The outside ♂ occasionally flies by my head, calling klee klee klee. But he has a notch on his hands. During this, the courting season they, like redtails, seem to spend a lot of time "just sitting" near each other, on exposed perches.

Unlike the red tails, they are more or less vocal during the at such times, and one hears little querulous begging notes from them. I heard such a note and upon looking up into the tall valley oak where this pair lives (see last summer's notes), was just in time to see the ♂ alight on the ♀'s back and copulate too far away to see if he held her with his beak. After the act he fluttered to a branch above her and they both sat in the sun, preening and "just sitting".

May 10, 1933. She always accepts live *Junco* crickets from me even when she will not take any other food. Today I noted that in eating the cricket ^{from} which she tore little chunks, beginning at the head end, she pulled out and dropped the crop and posterior parts of the alimentary tract, discarding them just as she does those same parts in the case of a vertebrate (bird, mammal; lizard I think she eats entirely except for scales).

May 22, 1923. A. G. R. It has been several



Certhia sparverius ¹²⁴

months since the sparrow hawk has been at Oakland (considerably before I got the captive *Aphelocoma* - see under *Aphelocoma*), and during this time she has become somewhat wilder, since she sees much less of human beings than formerly (see ante, her reactions to Paul Shaw, in February). As a result of this, she has evidently lost some of her old associations with me. She never says preep any more to me, and often flies away as I approach. Today she showed a new reaction. She flew to me every time that I approached the cage, and clinging to the wires - or perching close to them - she would watch every move I made, with her neck feathers erected in a peculiar manner (noticed before, when E. was the object of her attentions), and whenever I put my fingers within reach would strike at them with her feet, or try to bite them, just as she used to

do with Ethel and Mrs. Lueders but
never to me. When I went into
the cage she flew to my shoulder
and attached my head with her
claws, just as she used to do with
Ethel. She also alighted on the back
of my hand and bit it. I used
to think this was sexual behavior
in spite of the vicious aspect, and
can think of no better interpretation
(in view of her reactions to the ♂ sp. hawk,
see ante) even now.

May 24, 1933 Having too many other
pets to take care of, I banded
her - no ³⁶²⁸⁷⁴ ~~532251~~ - and turned her
loose at the Q.D., Alpine Creek
Ranch.

Dec 19, 1933 Chas. G. Hayes, State trappers operating
on quail refuges in vicinity of San Bernar-
dino, took one; stomach contained
feathers, bones, of a current tit.

Jan. 15, 1933. Menlo Park, Calif. As an illustration
of the indifference shown to sparrow
hawks by the larger passerine birds:
Today I saw two sparrow hawks perched
not more than 30 ft. apart on a telephone
wire, with a meadow lark sitting on

the wire between them. A mile further I saw two more sparrow hawks on the telephone line, this time with a Brewer Blackbird perched within a few feet of one of them.

See under *Buteo calurus*, p. 145, for mention of a redtail catching a sparrow hawk.

July 24, 1934 - ^{Summer Ranch (Sect 17, Twp. 75, R. 3W), Santa Fe Co. N.M.} I saw a ♂ sparrow hawk - whether im. or ad I do not know, but think likely the former - chasing jays (*Cyanus*) this noon. Several years ago (see ante, d. 1931) I recorded the play flights of a family group of sparrow hawks at Menlo Park, and think today's ~~play~~ chasing of the jays was a similar sort of behavior. The jays were feeding on the ground beneath an alder tree when the hawk sailed toward them about 7 ft. above ground and darted at one. The jay attacked gave a grating cry, dodged, and flew up into the tree. The hawk passed on; the other jays continued feeding on the ground. At this the hawk wheeled and flew back after another jay. This latter executed a lively sideways dodging motion

12

^{Coccyzus sporadicus}
while still on the ground, at which the sparrow
hawk spun around in a short loop with astonishing
speed and grace and pounced at the jay again.
This time the second jay also took to the tree.

September 13, 1935. South San Francisco. As I
drove along the Bayshore Highway, past some
marshy open ground, for a fleeting moment
I saw a sparrow hawk closely pursuing a
western meadowlark. ^{at a height of about 150 ft. above ground} Neither gained on
the other, and after about 100 ft. the
hawk veered off, rose up in the air, and
settled on a telephone wire, while the
meadowlark continued on its course.
More likely than not the sparrow
hawk was pursuing the meadowlark in
play; perhaps it was a young hawk - bird
of the year.

Ceryle alcyon

- 4/5/31 Los Banos Duck Refuge, Los Banos,
Merced Co. Calif. Kaufmann Ranch,
on Mud Slough, just n. of the refuge.
One bird flushed from a willow
overhanging the water.
- 4/29/31 L. B. D. R. Refuge Mud Slough by
Bulio nest. One flew out of willow
adjacent to Bulio nest and down a post.

(Snowy Plover).

Charadrius missus

7/23/30.

Los Banos Game Refuge, Merced Co. Calif
East side Ruth Lake on mudflats. Two young,
with adult. Young not quite able to fly.
Specimen collected (no L.B.P. 1.) Photos taken.

5/23/31

Just about same place as last time -
a few hundred yards north, ^{near} seahags, in
adult seen hovering up to me while
I was handling a young tildeer whose
loud cries were drawing the attention
of all shorebirds of the vicinity.



Chen hyperboreus hyperboreus

2/23/31

Los Banos Game Refuge, Merced Co. Calif. See waterfowl censuses etc for these birds of earlier date. There have been here all winter in some what varying numbers, but conditions have not permitted very many exact waterfowl censuses for some time.

This winter shows a somewhat greater abundance of this goose than at any other time as well as a falling off in numbers of Branta and Canvas - in fact I see very few of the other two species in comparison with the dense banks of Chen which spend the day resting, mostly to the north, northeast and northwest sides of the Refuge, often somewhat beyond its boundaries. They do not go near the water when in these large resting flocks, but stay on the (now green) young grass of the flats, in long dense banks. No counts made this trip. They are noisy and rather restless in the daytime, especially in the early A.M., but during the night are not heard so much.

2/28/31

L.B.D. Refuge. The geese are in about

2

Chen h. hyperboreus

the same numbers as last time, but seemingly more restless. All last night they kept calling and flying over head, and in the morning they moved into one vast ~~camping~~ bank and for no apparent reason moved $\frac{1}{2}$ a mile or more and settle in a new place. They are now on the west side of the refuge south of the main east-west road, a place where they have not been seen before this visit. McEllen says they have moved and are now so restless, because a Golden Eagle has for several days been seen chasing them (although no one has seen him actually kill a goose). I have seen no eagle yet this H.M. A count of all Chen on or off the refuge, as seen from the 3d. tower gives (approx) (2,800) on ground on east side of Refuge (150) moving about in the air at that place, about (470) at n. east cor of refuge which at moment of writing are moving over to join the main bunch in straggling loose small flocks.

(see one more
figuring
on next
page)

Chen hyperboreus hyperboreus

Only a few dozen Brants and about $\frac{1}{2}$ doz Amer seen during $1\frac{1}{2}$ hrs. observation. (In the main the Chen stick closely to the refuge or immediately adjacent areas, not wandering far afield. 5 minutes later - (250) more came in from the n.e. cor of the refuge and joined the main flock.

5 minutes after this another flock of (350) came in from n.e. They split into 2 flocks, then 3, then many small groups, then finally lit on the n.e. cor of Refuge on the B. Willow ponds.

30 minutes later. The whole flock got up for no reason that I could see and with a vast clamor, and in a stream that covered $\frac{1}{4}$ of the horizon, moved back to the B. Willow pond, and lit on the water. This is a very much needless move over earlier weeks. Other geese do not seem to mix with the Chen very much.

$\frac{1}{2}$ hr later: about (800) more came in from east side of Refuge and lit

4.

Chen h. hyperboreus

with main flock at B. Willows

3/1/31

1 photo

L. B. D. Ref. N.E. corner by Button-
willow ponds - perhaps more than
yesterday by 500 or so. Not quite
so restless. Some Branta mixed
in with them this time.

3/2/31

Same place etc. Restless near about as
much as on preceding day. Photo of
flock on wing taken from tower. Some
200 or more Branta mixed with the flock
on this day

3/8/31

Geese seem more restless every day.
In the A.M. they were over on the
west side of the refuge, where they
have been seen every morning for
the last three days. In the afternoon,
however not one could be seen
any where on the refuge.

3/9/31

About as before. In late afternoon they
were resting on the shore, and also, all
over the surface of the water, at the
Buttonwillows, in a flock of 4500 or more.

3/10/31

They spent the night on some
high ground to the east of the Button-
willows.

3/14/31

Geese in usual numbers on Button-
willow ponds. They seem not to be very

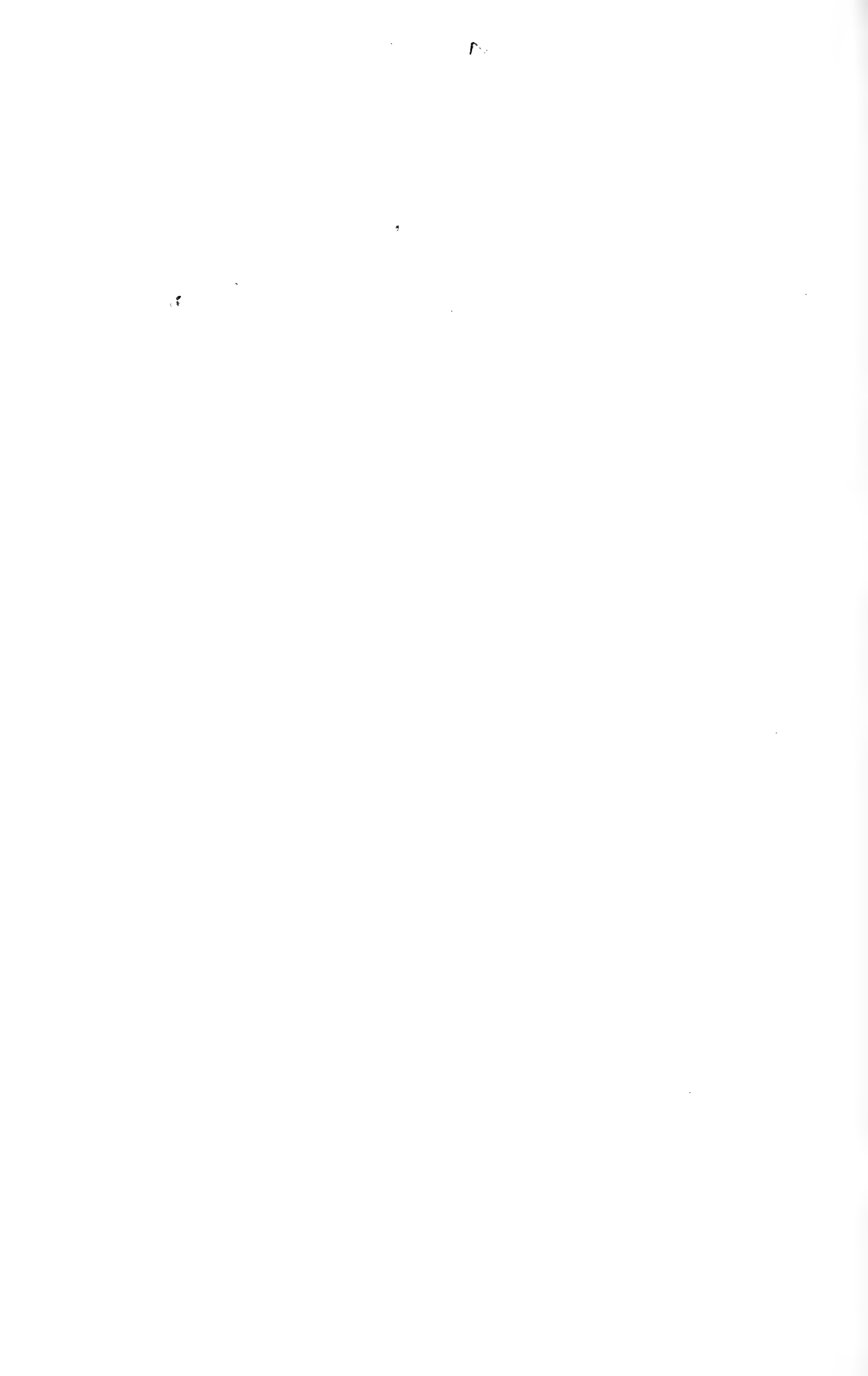
Chen hyperboreus 5.

wild for later in the afternoon while I was sitting in my Ford in plain sight on the open flat a flock of several hundred flew over me, in their wide-extended ranks, within easy gun shot. Whenever a flock ~~passed over~~ ^{intermittent} head one can hear an ~~scattered~~ thumping noise on the ground below as their scattered ~~droppings~~ ^{droppings} rains down. When the flock was almost directly over head there was a discernible parting into two wings to avoid me but this was after several ~~seems~~ ^{seems} had passed by. Later when a large flock was resting in scattered detachments 300 yds - 1/4 mile from my tent the birds resting nearby allowed me to cut the distance down to about 150 yds before they moved off to settle down farther back.

3/15/31 The geese spent the night in vicinity of the Button willows again as I knew from hearing them half the night. At about 6 A.M. before the sun was above the Sierras, although it was light, they rose up in a great flock and moved off.

3/16/31

3 photos taken by sneaking up mud



Chen hyperboreus 6

Slough when they were on the high ground just beyond, and then suddenly climbing the bank and snapping them as they rose.

3/27/31 L.B.D. Refuge. The geese are still in the general vicinity, but for the last week have not been spending as much time on the Refuge as formerly; they have been present in moderate numbers near Mud Slough south of Ruth Lake, but also on land n. and e. of the Refuge boundaries, but neither yesterday or today have I seen flocks of even half as many as formerly.

4/2/31 L.B.D. No birds seen today, or heard. I believe the large flocks have left for good.

5/6/31 Flock of three in company with about 9 Branta - the first I have seen since 4/2/31.

5/8/31 See remarks on 2 Chen under Branta page 3.

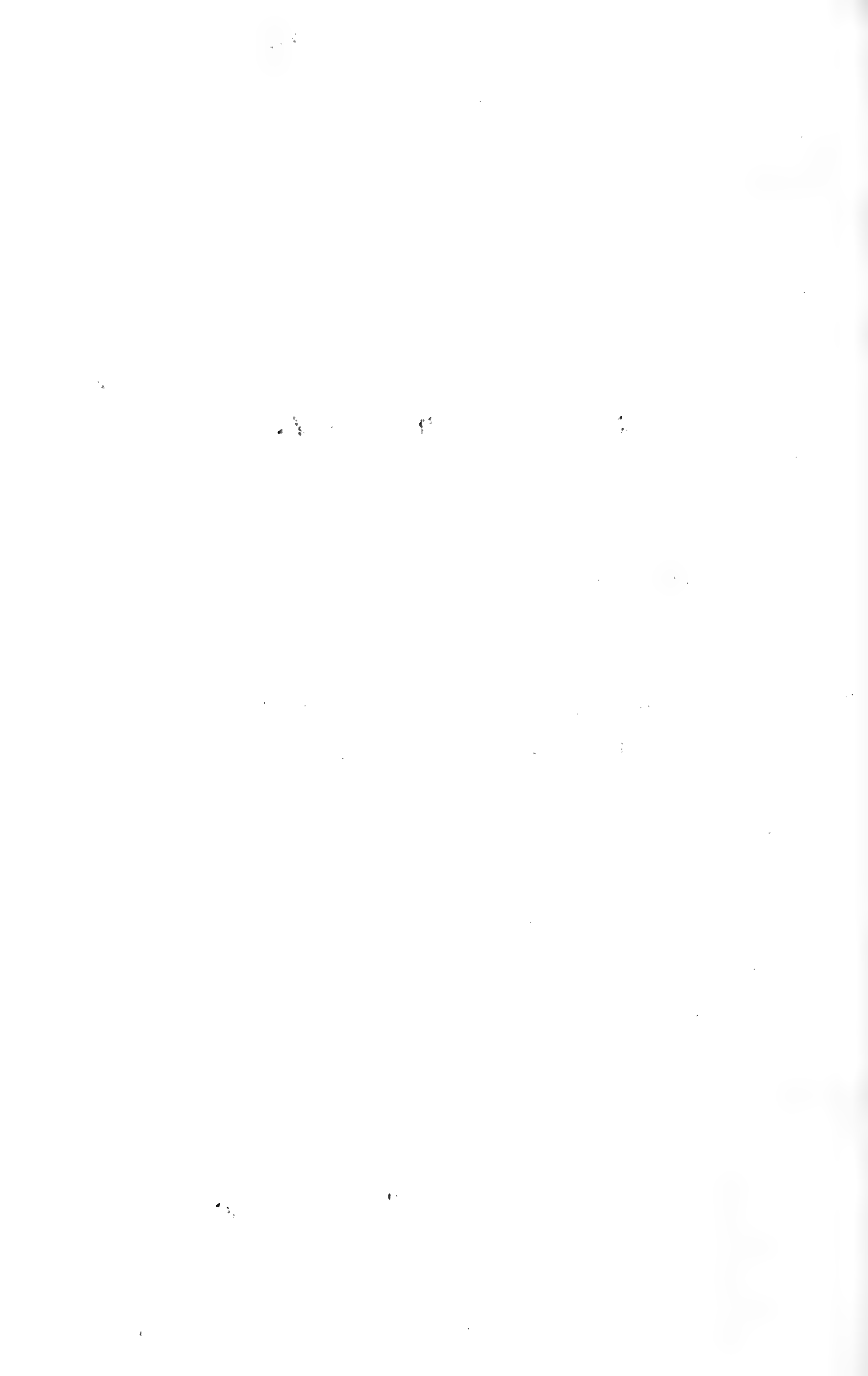
Chlidonias nigra swainsonensis 6

Black Tern

5/16/30. 6 mi. S. of Willams, along main highway. Several seen flying. Country flat, intersected by tule-filled irrigation ditches, wet.

7/10/30. Los Banos Game Refuge Calif. Large numbers (50-75) seen every day on Ruth Lake (other ponds not visited). On one occasion one of them, in the midst of a group of 3 or 4 settled for a moment on the water, calling all the while; 2 others flew up and hovered over head, where upon it rose and continued flight. Seemed to be a young from appearance of plumage. Apparently these birds nest elsewhere and spread into Refuge after breeding season. 30 minutes later. Same bird seen doing this 5 or 6 times in succession. It is young bird and it sits on water with head stretched way up, beak open, calling loudly to be fed. Two adults (♂ and ♀) hovered about and nearly touched beak but did not actually feed it.

4/19/31 L. B. L. Refuge, by 2nd Redtail camp. When I arrived today after an absence of 5 days I saw this migrant for the first time this year; there were about 40 in a loose straggling flock hanging over the grass-dry at this point - and floodlands.



Chlidonias nigra
sumatrensis

2.

L.B.D. R.

5/8/31

~~to~~ Olson Pond. The birds are largely, or all, paired. There were two copulating on a tiny 4 ft. island of grass sod on Olson Pond. After copulation, one of the birds came and stood so near a *Sterna forsteri* which was sitting down there that it brushed its wing feathers. It stood there many minutes without any hostility from either. Shortly after this, however another pair of black terns came flying to the island, screaming. They alighted on the far end, where upon the bird next to the *Sterna f.* crossed over its tail and with head down ran at first one and then the other of the intruders, whereupon they left. The original pair stayed there until I flushed them.

Chondestes g. strigatus

3/26/31 Kaufmann Ranch n of L.B. I Refuge.
Mended Co Calif. Along Mud Slough in
Willows, one bird seen. E.S. Cheney
told me he saw 12-15 of these on the
Refuge 3/24/31.

7/25/30.

Chordeiles antipennis texensis
Las Banas Game Refuge, Mineral Co. Calif.
Extreme N. E. corner on dry alkali flats.

I flushed from 2 young at 20 ft; she flew away and disappeared. $\frac{1}{2}$ hr. later when I came back with camera (1 photo of young) she flushed at same distance but fluttered away just above ground, so that her wings just touched on the down stroke.

Young were covered with grayish down through which pin feathers of primaries were showing. They kept their eyes nearly closed and were quite motionless except that one began to pant rapidly after being exposed to the hot sun (This indicates that they have to be brooded at this time). They showed no fear or any other reaction. I did not touch them.

Nest: hardly even a depression at least not scraped out by the adult. Ground smooth, unbroken, and devoid of any feathers etc; only a few pieces of excrement in a circle about the young. The youngsters were just at the edge of a small tough scraggly weed common to this terrain. It threw a very slight shade over them when the

7/29/30.

sun was in this position. [11 A.M.]
Same brood. They had been moved and were under another similar weed 15 ft away; both together, as before, and neither seemingly capable of moving by itself. It looks as if the parent must have done it. She flushed as usual and flattened over the ground, coming to rest with wings outstretched, feigning injury. When I paid no attention she faced in my direction, wings still outstretched, but with head up, watching me. Occasionally she "upbinned" in characteristic fashion. I set the camera up 4 ft from the young and went away for $1\frac{1}{2}$ hrs. She had not returned when I came back.

2 hrs. later. The young had been moved again, about 10 ft. to another bush. The ad. after fluttering a while, flew to a fern 100 ft distant, and perched cross wise on a bank wire strand. Here she stayed for at least 15 minutes, although the wind was blowing hard, so that she bobbed up and down, and her feathers were ruffled. Finally, she flew back toward the nest and settled on the ground, out of



Chordeiles (cont.)
a. texensis

3

sight of me. Further waiting brought no results, and 1 hr later she was still not on the nest, although the young had been forced to crawl into the middle of the weed for shade. Young tied to weed with threads; camera left in place over night. ³/₄ (or 3?) photos taken of young.

7/30/30 8:30 AM. This time successful. Bird "brooding", that is to say she was sitting between the two young, which were about 6" apart. She was facing camera, and allowed me to approach within 3 1/2 ft before flushing.

3/4 hr. later. ♀ on nest; photo taken. She flushed at 3 1/2 ft again, and took up a position on the ground, motionless and with wings folded, 20 ft away. Young banded (425859 and 260). They are very quiet like young owls, although im. plumage feathers are becoming well developed. Only sound made was a faint querulous single note (high pitched and "capri mulgiform") when turned upside down for banding. Very owl-like in their impassive attitude.

7/31/30 Ad. not visible; young dead because they got their feet tangled up in the threads. Probably the sun got too hot for them in this exposed situation.

Chordeiles anthracinus bairdi 4.

- 4/22/31 L.B.D. Refuge - 2nd Redtail camp -
one bird seen "hawking" across the flat
in the dusk - the first record this year
for the Refuge, although one was seen
on 4/5/31 on the Kauffman place
immediately north of the Refuge.
- 4/27/31 L.B.D.R. just across N. boundary, on
Kauffman's place. 6:45 P.M. Two birds
flapping and zigzagging about, one
pursuing the other and crying. They
circled and zigzagged and seemed not
to be in a hurry, but nearly all the
time the second bird was about $1\frac{1}{2}$ -
3 ft behind the other, calling in the
characteristic high pitched nasal whine.
- 4/30/31 Same as above. 9 A.M. (about). Two birds
flushed from ground at just about the
place where seen the other evening. One
of them whined and came landed as it
circled about but I could find no nest.
I marked the spot.
- 5/8/31 L.B.D.R. just w. of 3d. house. These must
be a migration of these birds at this time
for the meadow flat were swarming
with them at dusk; there were at least
fifty at one time visible as I drove by.

Chordeiles subsp.

5.

8/8/31

Between Cottonwood and Quesnel, British Columbia. 10 A.M., bright sunshine. Dozens of night hawks seen gyrating above the road, foraging.

5:15 P.M. (bright sunshine) Lytton,

British Columbia. Similarly, we saw dozens hawking above the town, at varying altitudes below 150 ft.



Circus hudsonius

7/8/30.

Los Banos Game Refuge, Calif. One seen flying low over marshy ground toward dusk; two redwings flew at it, following for about 50 ft, as it went by. It paid seemingly but little attention, perhaps flapping a little more steadily.

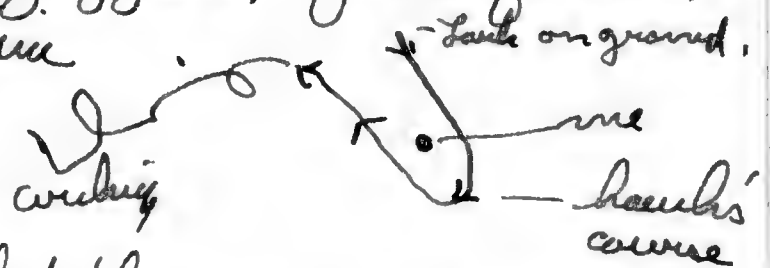
7/19/30

Los Banos Game Refuge. An individual in ~~the~~ plumage was seen flying over the flats on S. side of Refuge, carrying a horned lark. All at once it dropped it. The lark, still alive, flew weakly to the ground about 7 ft away, the hawk with outstretched talons hovering about 2 1/2 ft above it, but not pouncing upon it. When the lark reached the ground the hawk lit beside it, then gave a little jump into the air and lit with spread talons upon it. It seemed not to bite it, but after examining it with many turnings and turnings of the head rose with the lark about 3 ft into the air and then dropped it, fluttering, and pounced upon it, just as before. This it did 7 or 8 times and I marvelled at the clumsiness of the bird until I realized it was playing. At length the lark fluttered into a tangle of a common shrubby weed found



Marsh hawk (cont).
Circus hudsonius

here, which seemed to furnish even more interest to the hawk. It would prance about in the weed, taking great high steps, and now and again bending down and peering intently at its ~~the bird~~ prey. I do not think the hawk at any time really lost its prey ~~victim~~ however. This continued for about 10 min. after I first saw it, after which the hawk with its victims settled in a little depression and was out of sight. 5 minutes later I walked over there. At 100 ft the hawk became visible, standing in the depression - a flat open place - feeding. It saw me, rose empty footed, and made straight past me, turned, circled around me at a distance of about 30 ft and made off in direction from which it had come, circling and flapping in leisurely fashion. The hawk was eaten all but some wing and tail feathers, gizzard, piece of liver, and fragment of intestine.



It is interesting that there were 4 or 5 ground squirrels sitting by their holes, one of them only 50 ft from the place where

the hawk was feeding and yet none of them at any time showed concern over the hawk's movements.

7/22/30. L.B.G. Refuge. S. side by Mud S. Lough. Marsh hawk (same plumage as above) seen patrolling flets all morning; seems to be its regular beat.


West side refuge. ♂ seen in P.M.

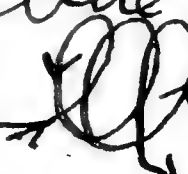
7. " " brown individual chased away by Avocets. The avocets would dart at him, where upon the hawk would dodge and fly away in haste.

3/15/31 L.B.D. Ref. Olson Pond. An ad ♂ seen to fly up to an altitude of 40ft - 60ft then fold his wings halfway and drop like a plummet until nearly touching the ground then rise, flap to regain altitude, and repeat. This the bird did 5 or 6 times over one spot, a bed of short rushes, and then flew 150 yds off and lit on the ground where he remained still except that he continually glanced about. After about 3 minutes on the ground he made off, over and past the scene of his acrobatics, and sailed and flapped in customary

4

Circus hudsonius

usually flight until lost in the distance. Because my line of vision paralleled the long axis of his swoops and rises I could not be sure whether he went like this:  or like this:

 where he would have made a complete summer saut but I got the impression from his staying in one place and the rapidity of the whole that it was the latter. Went over to the marsh bed in question but found no nest, or other marsh hawk. Looks like another case of play.

3/24/31 L.B.D.R. Same place as above - note given me by E. S. Cheyney. Saw the ♂ carrying a long stick to the same section of marsh grass where I had watched it. It lit in the grass with the stick, out of sight, and then rose in about 15 seconds and went through the same performance that I had seen. Cheyney went over there but could find neither nest nor ♂ bird, just as I could not.

Circus hudsonius 5

- 3/27/31 " L.B.D. Refuge n. of shack. A ♂ seen "looping" by Donald McLean in same manner as other bird seen by Cheney and me - it may even be the same bird since it was only a mile from the place where Cheney and I saw ours.
- 4/30/31 L.B.D. R. by 2nd Butte camp. Since about 4/19/31 I have noted either a ♂ or a ♀ hawk nearly every day once or twice in the vicinity of camp. Most of the time it has been a ♀ and only about three times has it been a ♂. Yesterday ^{at about 7:30 A.M.} I first noticed the ♀ alighting in the extensive tract of much grass to the n.e. of the tent. It would be flapping and sailing low over the grass and then leisurely descend (not a pounce) into various parts of the grass (not in a particular spot - see also one observation for today). I did not see it carrying any grass.

Yesterday I saw this same general performance at 7:30 A.M. but did not observe closely; then at 1:30 I saw the bird flapping and soaring to gain altitude in this same general locality.

Today I was out there again at 7:30 A.M. and saw the ♀ again, this time

watching more closely. She would fly to the edge of the rush-grass patch and alight on the open weed covered banks where there were dead ~~weeds~~ stalks as well as new growth and walk about for a few steps with her head down looking for dead stalks; in a few seconds she would pick up such a dead weed and rising with it in her bill turn toward a particular spot in the grass patch, fly past it, make a half loop, and then settle down leisurely (i.e. not pounce) into the tall grass at that point, and disappear from sight. In less than thirty seconds she would rise with empty beak and sail away to the edge of the grass patch again. In all she made about 7 trips in ten minutes and then sailed away without returning - possibly because I stepped out from behind the car (125 yds away) to get tripod and telescope to mark the spot.

Most of the time she went to the same spot to get her weeds, although not always. Once she carried a particularly large weed in her feet

but all of the other times she used her bill instead. Once she picked up a piece, started to fly with it but stopped and picked up another piece in addition, but in flying away with them dropped first one and then the other so that she had to continue on across the marsh patch to the other side and pick up another load. Once I saw her tug violently at a weed which was still rooted but it did not give away and so she walked a few steps farther on and picked up a loose dead piece instead. Several times she passed right near horned larks and in one case alighted within 10 ft or so of one which was in the open but it made no move to escape and simply stood there, upright; no wonder marsh hawks eat horned larks if they are that easy to approach.

My auto track into camp passes directly across the grass patch within 20 ft or so of the nest; am changing it, to go around, from this time on.

Cinclus hudsonius 8

5/6/31

L.B.D. Refuge. Same haul as above.
Started watching at 6 A.M. (dawn sunlight).
By 6:18 the bird had made 10 trips; at
6:24 she has only made 11 because she
had to do a lot of searching for the last
load. Her procedure after leaving the
nest and flying to ^{the} edge of the grass
patch (always to the N, N.W., or west
edge) is to fly along with wings ^{flaps}
less above the grass, often hovering
like a sparrow hawk and then pounce
down rather suddenly, and either
pick up a piece of material immediately
or else slide up to a green weed and
try to pull a piece from it. If
successful she works with the piece
and flies to the nest without hammer.
She was unsuccessful nearly half
the time toward the end of this period
and in this case she would rise
and soar over the grass tops for
another stroke - anywhere from
two feet to 5 feet, and suddenly
"pounce" again. Her pouncing at
particular places every time suggested
that she singled out her stick or
weed branch before alighting.

Circus hudsonius 9

at 6:30 she still had failed to find the 12th piece, although searching and moving about for 4 minutes. This time she flew over past the nest and lit in another place (still see later) _{= encoeur!}

for about a minute, for no reason that I could see, and then rising - empty-footed, went past the nest again, hovered over it, passed on, lit once more, rose and alighted out in the open grass. For 5 minutes she stood there, preening most of the time then flew to the nest empty-footed and alighted.

At 7:45 she has made 4 more trips - 2 with sticks and two without. In carrying the sticks - if they are small she nearly always uses her bill alone. If they are large she uses her feet; in one case of a particularly large branching stalk she carried it in beak + both claws; in another case she transferred a piece from her beak to claws (one or both?) while sailing toward the nest. She is frequently pursued, as she goes by, various ♂ *Anas* redwings as she

passes over their territory.

Note: The nest whereof I speak on this date is not the same as the nest of the last time but is about 30 ft. north of it (dummy nest idea).

7 P.M. either 5 or 4 times, the next to last being empty footed. Although the tent is only 100 yds away and I make no attempt at concealment the hawk pays no attention, often flying directly toward the tent for some distance in its maneuvers. Ceased regular observations at this time.

7:12 still carrying weeds. It always makes a loop to the south of the nest and then turns north in order to alight facing the wind.

7:31 Still at it.

7:50 I saw the hawk far to the e. n. east sailing leisurely over the flats. It disappeared and did not come back to the nest area again (8:02 time of writing). evidently labor is over for the day - at least temporarily. This is about the time the hawk used to stop

Circus hudsonius.

"

on the previous days when I saw her in the vicinity, although I did not comment down there because not sure that I was not the cause; in this case I know I wasn't.

8:15 Hawk back again, carrying n. nest. It made numerous trips but I didn't watch closely. Once I saw it drop a stick which nearly at the nest, whereupon it did not alight at the nest but kept on going and alighted on a "ridge" 200 ft further on. 8:40 has stopped again (gone east).

5/7/31

Same bird, same place. Noticed carrying sticks at about 7:20, although I spent no time watching. They were being carried to the same place as yesterday.

3:30 p.m. (Wind has been blowing very hard since about 8:30). I caught sight of the marsh hawk about 200 yds S.E. of her nesting site hovering just above a line of rush-grass. In spite of the gale she seemed not to be embarrassed in her flight, for she hovered over the spot on wings that moved

only slightly, just as usual, and later on she rose and flew from place to place quite in the ordinary manner.

3:40 (about). In driving by I flushed the bird from an open grassy place about 200 yds east of her nest. In her talons was a small gopher. She flew about 100 yds further east and settled down to eat one more but I drove toward her once more, whereupon she again rose and flew back south and perched in an open place. Once more I drove near (= past) and this time she flew 200 yds north over by her nest, still carrying the gopher. I left.

5/8/31

6:45 (when I first looked for the bird). It was making its usual trips with straws, although at less frequent intervals than before, with more sailing, and hovering about a fixed point. At about 7 P.M. I began to watch it steadily for a while (wind blowing hard again today). It was bringing a small weed stalk but dropped

it when half way to the nest
and so continued on past the nest
without stopping. All at once over
an ~~some~~ high ground beyond the
grass patch it checked, its slowly
flapping course half turned, and hovered
for a moment above a bush, dropped
down to it then twisted and turned with
out stretched talons this way and
that above the bush — just as I had
seen it do so many times before
without knowing why it did it; this
time I saw — and killed a grasshopper
(I think, or it might have been a noctuid
moth). In this case the hawk
missed her quarry. Shortly after
this the hawk alighted again; a
horned lark was standing near by
but made no effort to fly away;
that it was not simply courting
in fear is shown by the fact that
a moment later while the hawk
was still on the ground in plain
sight the lark rose and flutted
in the air singing and then
alighted again — not seven feet
from the hawk. Also: — not four
feet away a ground squirrel

came out of his hole and sat facing the hawk. He ducked in shortly before the hawk took wing but came out again while the bird was in the air a few feet away and made an excursion away from his burrow.

About one minute after the above, with the hawk still in the air, a pair of ducks (spring?) came flying by and as they did so the hawk gave chase; they easily outdistanced him however, and he turned back after a couple of dozen feet. Later he made a sally at another pair of ducks, flying with the wind this time and making much better time but they too left him behind.

Shortly after this the bird made several trips with sticks in close succession, once with a ridiculously small one about 3" long at most. At 7:40 it sailed and flapped away ^{north} eastward and I lost it for it did not return.

8:05 Back again, and stayed about

Circus hudsonius

15

for a while. All at once I saw three birds near each other over the marsh, one was farther away and dark and was the ♀. The other dropped down into the grass before I could get the glass on it, and I never did see it again (8:52 time of sighting).

1 P.M. I saw a much hawk of ♀ coloration "looping" quite high in the air. This ascending - and diving performance was done with ~~the~~ ^{steady} flapping on both the up and down flights. ~~After~~ After nearly two minutes of this the hawk began to soar and rise. This all took place right near the nest, although I was over by the Button willows.

One hour later: scanned up a ♂ $3\frac{1}{5}$ mi. n. of the nest. He had the posterior most 5" of a small snake in his talons (probably gopher snake). He only flew 20 ft the first time in spite of my close proximity and continued approach, then he flew another 50, then 150, and settled there to continue his interrupted meal.

While he fed I suddenly saw the ♀ 200 ft away, flying low and pausing to alight every now and then. While I was watching her the ♂ rose, still with part of the snake (he carried sometimes in just one talon, up to his breast, with the other talon hanging down), flew back past me within 50 ft, and away south gaining altitude; the ♀ rose too and followed him although not very close.

3:15 A ♀ marsh hawk was seen flying low and steadily, with no soaring, from the east boundary of the Refuge past the S. side of Olson park and on over to Mud Slough - moving very smoothly and directly for a marsh hawk. When she got to Mud Slough I suddenly made out another marsh hawk sailing about 50 ft up in the air. She flew right up to this one and chased him, following its dodgings down to the ground and then up into the air again. Then the

other bird gave way and flew steadily south, while the first (victorious aggressor) bird continued on, now toward the slough, where I lost her. Don't know whether this was the nest building ♀ or not.

5/9/31 (Same hd + pl.) ♀ seen making a few trips to the nest about, not nearly as many as usual; instead she spent a lot of time flapping heavily over the grass with occasional drops but usual & slower descent into it, as though feeding on insects. At about 7:20 I saw her do the looping stunt, thought characteristic of the ♀, for five minutes straight, then ^{flutters down} empty footed to the nest, remains a moment, rise, and continue the looping for five minutes above the nest locality then move on S. over a ridge and go through it again.

5/14/31 L.B.D.R. As above. Bird seen flying in vicinity of nest just once today and not observed any where else either. I suspect that she may have commenced incubation.

Circus hudsonius. 18

The ♂ was seen, flapping and
soaring $\frac{1}{4}$ mi. or so to the east, abv.,
this A.M.

5/20/31 L.B.D.R. 2:30 P.M. (when I arrived in
camp - no bird in sight)

3:30 While still at camp I
caught sight of the ♀ just as she was
settling down into the musk grass. Water
has been let into the area but I can't
tell whether or not it has reached the
hawk nest. Bird not seen to rise
again.

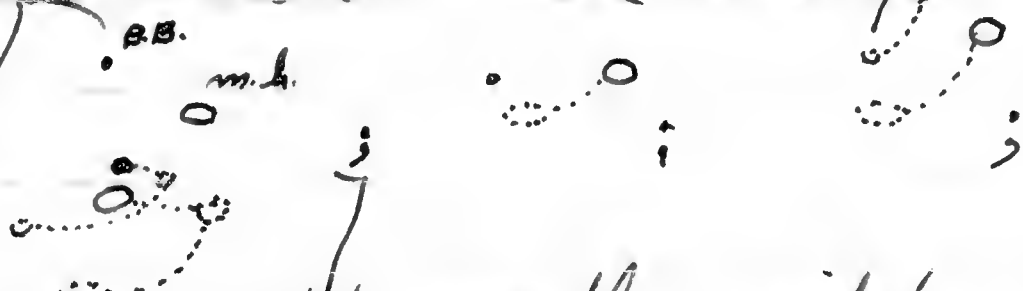
5/21/31 7:40 (when I first looked) no bird in
sight. 8 A.M. I first saw the bird
at this time; she was flying past the
nest with empty talons, soon she
descended - hesitantly it seemed - fluttering
into the grass about 40 ft from
the nest and remained out of sight
for a couple of minutes. When she
arose there was the limp form
of a *Microtus* (?) dangling from
her claws. She flew a few ft away,
alighted, spent about 1 minute, or
less, there, and then rose again, empty
footed. She had not been sailing
two minutes before the same

thing happened again - just as before. Then she flew away n.e. out of sight. At about 8:30 - no hawk having returned - I happened to notice one flapping and sailing about $3/4$ mi. to the south. Watching it I saw it gradually make toward the nest, fly right over it, become harassed by the resident Redwing and finally drop to the ground in a little open spot just where it used to when gathering nest material - and where I used to once recorded that a gr. squirrel sat about 4 ft away without alarm. The squirrel was there this time too, just as before! The hawk walked about some, possibly getting grasshoppers, then rose and sailed away to the east - 9 A.M. she has still not returned. I forgot to say that once I saw another hawk (note I think) sailing $1/2$ mi to the east but it did not come nearer.

5/22/31

7 A.M. (When I started looking). Bird nowhere in sight. At 7:10 I suddenly saw her descending into the grass nearby. I am sure she had not been at the nest.

A few moments later she rose, circled over the nest, was harassed by *Ag. hudsonius*, and then making a loop, returned to near where she had been. A few minutes later she rose and again flew over the nest, this time being chased by three or four black birds. Every now and then she would try to catch one but suddenly darting upward - to try to get above them - and then turning about and flying after them. They always kept their altitude however and easily eluded her.




At last she drifted north, circled once to about 75 ft of dist from ground - still pestered by *hudsonius* - a new lot - and then drifted off out of sight again.

10 A.M. I noticed both birds near each other, about 100 yds e. of the nest. First one and then the other would rise out of the grass and alight again 50 ft or so away. Finally the ♂ rose and began to circle for altitude and I lost track of the ♀. The ♂

Corvus hudsonius

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went up about 250 ft and "played" (= dived) for about 15 minutes straight. he was not seen to actually loop, but at the top of each dive he usually curled around some so that on heading down on the next dive he would be pointing in a different direction.

 (hard to represent on a flat surface).

all at once, when he was 400 ft up, about, I noticed the ♂ Buteo (of the 2nd Buteo pair) soaring in that direction. A moment later the marsh hawk, which was above, dived at the other several times, the 'red tail' swooping a little each time but not turning over tail up. Presently for no apparent reason the marsh hawk, although still on top, sailed off on wings mostly set and came down on a long slant about 1 mi to the south. here it dived at a red tail and there was some rapid motion too far away to see, then the marsh hawk continued flapping eastward, near the ground, and

23

finally disappeared far away (the Redtail I had lost). At about 10:25 I saw the ♀ near the nest, about where I had last seen her; she sailed away and was lost again. I feel sure she had not been on the nest since last seen. I forgot to say that the ♂ also gave chase to some Ag. hudsonius just as did the ♀ earlier.

2 P.M. ♀ seen to alight in tall grass where nest seems to be; ♂ was circling about nearby. I watched the ♂ and suddenly saw another bird - the two of them had some sort of a "fight" during at one another continually until I lost them both in the distance. I then walked over to the marsh - now flooded - to where the ♀ had disappeared, but could not find the exact place. All the time I was in the marsh - about 10 minutes I saw no marsh hawks anywhere; I am mystified! I forgot to mention that while I watched the ♂ this P.M. (p 20 et seq) he suddenly started at something came up, and started again two

Circus hudsonius 23.

as three times, twisting and turning in flight each time; I could just see the glint of something running which must have been either a cotton tail or a ~~squirrel~~ squirrel, but the hawk did not get it - perhaps it was just playing. There was a squirrel not 4 ft away watching but this one showed no sign of alarm.

5/23/31 ^{One bird} Seen as usual - the ♀ - but not very near the nest - now to the s; now to the n. The bird has some missing secondaries from the left wing.
4:05 a ♂ seen about 100 yds. w. of Mud Slough near m.-e. & w. rd. I paralleled him with my Ford at about 75 yds - he being in no wise disturbed, and found his cruising (hunting, presumably) speed to be 20 mi. p. hr.

6/2/31 Have not seen much of the birds during the last week, although, admittedly, I haven't spent more than 5 minutes at a time looking. However, it is certain that if the ♀ is still using her nest in the marsh by my tent she is extremely secretive, else I should have

see her going to or leaving it,
which I haven't.

~~6/27~~ 10:20 A.M. (Bright and hot). Watched
the ♂ quartering for about 15 min.
steadily. He did not seem to get
anything, although dropping down
once or twice. One could trace his
course over the various mounds
by the anxious ones of the various
holders of the vicinity, each subsiding
as he left it in the distance, the
one to be taken up by others farther
on. Several times he was chased by
blackbirds and once by a stilt. He
certainly has a wide hunting ground

see
this
mound of page 29
I have seen
in water.

with

10:20 A.M.

3

med slough.

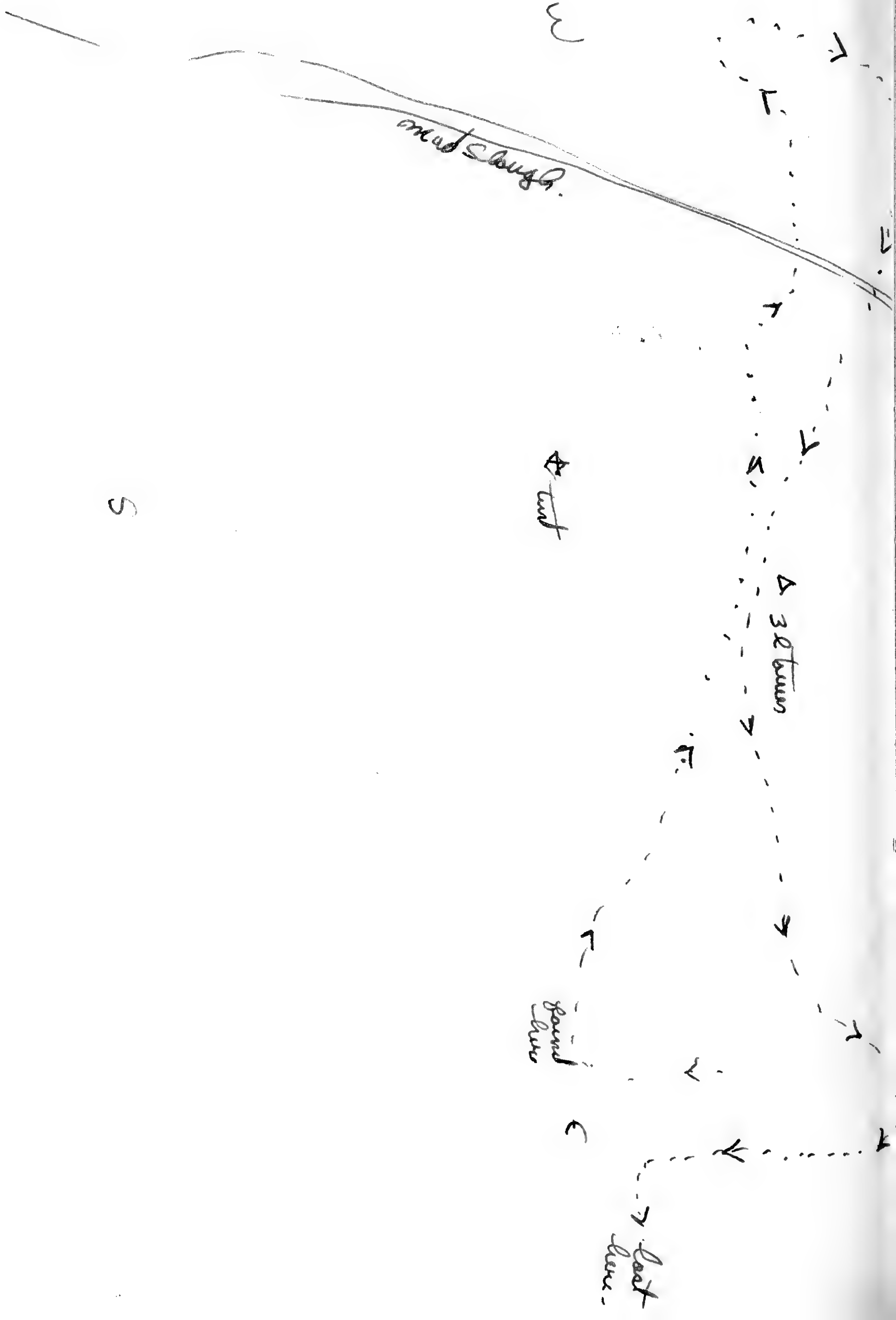
5

Δ turf

Δ 30 bures

bound here

lost here



3:10 P.M. 1/2 mi e. of "nesting area",
on a flat open grassy place. I flushed
and rose circling - there is no place out
there where she could have had a
nest, and I don't believe she has
been sitting at anytime since I
first began watching this pair.

6/3/31

8:45 A.M. Today my attention was attracted to
the ♀ soaring low over the marsh by the
cires of an attendant still which was
pursuing it - while I was eating breakfast.
Presently the hawk went down, where I
didn't see, and five minutes later I
walked out into the marsh - now
deeply flooded (1 ft) all over the region
where the hawk had been taking her
nest materials earlier. I walked the
length of the place without seeing
up the hawk (sawed up a nesting
Dafila - p. 1, 2, - testifying to horniness
of the hawk, though) and was on
my way back, along the outside
edge of the marsh, when opposite
the first nest site, way out in the
tall dried (field) grass she rose up. I
could find no nest but was not
quite sure from where she had
flown, so left hurriedly. The

kept circling higher and higher and farther southward at the same time until five minutes later. That was.

12:45 P.M. Went over to same spot as above, but saw a sign of a marsh hawk.

6/6/3, Pebble Beach land just across line from L.B.D. R. S. E. cor.; by big ditch. 6:20 A.M. (Sun up at 5:45 A.M.; light nine 4:10) I just saw a ♂ marsh hawk alight on the ground, bend his head way down, with wings partly out stretched and crouch thus for a moment. I thought he must have some prey until a moment later I saw a pellet between his mandibles - pellet which he let roll from them, head still lowered to the ground, and then looking sharply around, rose and made off with his usual easy flapping flight.

Marsh hawks frequently can be seen to look not merely straight down but down and back, at what they have already passed.



Marsh hawks seem to have a more or less regular beat, or at

Curus hudsonius

it is certain that certain portions of their hunting ground are visited with considerable regularity throughout the day. I have been sitting here now since 8:30 A.M. (now 5:45 P.M.) and many times - maybe 15 or 20 I have seen a pair of marsh hawks (single, and most often the ♀) over the s.e. cor fence of the L.B.D.R., especially the triangular piece bounded by the fence and the ditch. Several times one or the other has alighted there, even; perhaps grass hoppers are the cause for all this.

6/8/31 L.B.D.R. 1/2 mi e. of 2nd Butte Camp, on a high point.

5:25 A.M. (Sun up 25 min or so.) a ♂ fly south just as I was going to my place of watching; I saw him only a moment.

Ab. 7:10 I caught sight of the ♀ and by dint of great good luck and much strained eyes followed her in her leisurely flight until she disappeared over some fields at least 1 1/2 miles n.e. of the nest - way over near some gun club sheds north of the Standard Oil pumping station. Then ten minutes

Later I saw the ♂ - first right near the nest territory, as with the ♀ - and followed him too, till I could see him no more, in the northward Salt & loquax. Truly these birds have a wide territory; also I am sure they have entirely given up the camp nesting site (the water is all through there and deep), but whether they as yet have chosen another area I don't know - you would never think so to watch them, but then?!

8:05 just now caught sight of the ♀ again, sailing low and with a certain "air" hard to describe, as of purpose, to the east of the old nest territory. All at once she alighted - in what seemed to me a dry weed patch. A bunch of squirrels keep watching - sitting bolt upright; I hope they see more than I do. 3/4 of an hour later I go over there - it is a dry weed patch and very barren dried mud as well; the bird flies up, there is no nest. I don't think the birds have a nest. They probably laid eggs and then the rising water drove them out.

I have never so far heard any noise hawk utter any sound, even in the play or the flight.

Circus hudsonius

29

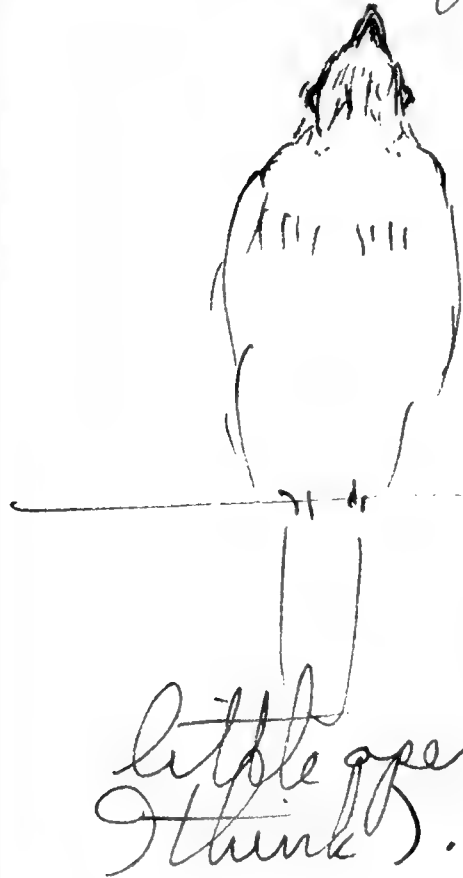
contrary to the experiences of some others
August 6, 1932, Indianpoint Lake, British
Columbia. See under *Falco columbarius*,
p. 2, for account of a fight between a *Circus*
and a *Falco*.

Aug. 10, Indianpoint Lake, B. C. Saw another
marsh hawk over by the ^{near the water} Cold Spring Pass. It alighted on dead
bare, broken off stumps, several times and not once
on the ground — naturally enough, for there is
essentially no bare ground in this country. J. J. McAle
says that marsh hawks use fence posts and stiles
for perching in this country because there is no
bare ground.

Aug 11 - Indianpt. Lake. Watched a marsh
hawk in juvenal plumage as it sat at the
edge of Indianpoint River where it leaves Indianpt.
Lake. The bird perched for a while on a fence
by the house and then flew to a tall, ^{live} spruce on
the edge of the forest, and alighted on a branch
several feet from the top. Here it stayed for
many minutes, while two Canada Jays
sailed it and flew about it. It turned its head,
following their movements, ~~and~~ so that



when they were directly above it
the head was pointed directly up:



however, they did not
come very close to it,
and it never seemed
much disturbed. After a
while it flew away,
more or less into the
thick timber (toward another
little open marshy place beyond,
I think).

Colaptes cafer callosus

10/4/30

Los Banos Game Ref. Merced Co. Calif. Bare ground just s. of Buttons willow ponds. A flicker flushed from ground in a dense mass of (composite with gummy flowers, non-spring) which was growing 2 ft high in ^a thick stands 35 ft wide by 200 yds long (in old flood bed). No trees present nearer than 1/4 mile away, and these only at one point.

11/21/31

Alpine Creek Ranch, San Mateo Co, Calif. Bunk house. Two flickers have been roosting in the bathroom (which opens off the back porch; door open), sitting on the window sill.



on the ^{beginning to} plank board. It gets dark by 4 P. M. now, just as soon as the sun disappears behind the hill, and the flickers come in as soon as it begins. They have been roosting there a month or so. To day, at 4 P. M. I found a flicker in a new place, i.e. the small hole under the eaves at the w. end of the bunk house. He did not come out as I walked under eaves, but remained with his head

Colaptes cafer collaris ².

showing at the entrance of the hole. I had imagined that this hole had been gnawed by rats (which are said to be numerous around the bunk house), although wondering how they got up there to gnaw it, but believe now that flickers have made it. The hole opens into the space between the inside wall of the ^{staircase} room and the outside wall of the bunk house; how extensive the space is at that point I don't know, but should imagine that a beam runs along under roats somewhere, or the liquid might fall all the way down to the bottom, otherwise.

March 20, 1932. Same as above. Flickers have continued to roost under the porch roof, intermittently, since the above date. That they have not roosted there continuously is indicated by the fact that I have spent a number of nights in the bunk house and passed their quarters after dark, without hearing them. Sometimes, however, especially during the last two weeks, they

have been present. Perhaps their
absences have been due to my
disturbing presence; for instance,
they are not roosting on the
porch to night, and they were scared
away from their roosts, after
dark, last night, as I walked by
on the porch. It is of this scaring
away of the birds last night that
I wish to speak: Linsdale tells
me that someone has written
an article (in *Ondor*, I think) describing
the actions of a flicker, ^{after dark} which are
quite at variance with anything
which I should have expected.
According to the article a flicker
was seen flying about after dark
(seen with flash light beam) quite
at its ease; it had not been
disturbed by the observer, but
was apparently making these
excursions on its own hook.
The inference is that bird, at least
flickers, can fly about with
ease after dark and are not
night blind as I should have
imagined (and as are many

Colaptes cafer callurus

4.

birds see Euphagus about eight months ago, at Las Barras, for example). With regard to the actions of the Alpine Creech Flicker, however — the bird, upon being seized by me as I walked past its perch, flew out in a fluttering, uncertain manner toward the chimney lit sky outside the porch, and immediately encountered the branches of an oak growing by the porch. It did not behave as it would have in the daylight, however, for it rather dodged the branches and flew away nor did it perch in them immediately; instead it fluttered and buzzed about in them uncertainly, apparently chattering at one of them momentarily and then. Losing its grip and plunging down among the tree for a foot or two until it encountered another support, where it finally lodged. What became of it after that I don't know; I think it flew away as I moved

Colaptes cafer collaris

5.

closes; in any event, the bird did not show its usual speed or agility either in the air or in the tree, further more, I am sure that it was not blinded by my small flashlight.

Other instances that I can recall of birds being night-blind (this as a counter to the article mentioned above) are as follows:

1. A kingbird which roosted in the nest tree of a *Buteo l. collaris* at the Los Banos Duck Refuge; I visited this nest several times (i.e. several nights) after dark, and always observed that the kingbird thrashed around and bumped himself in his efforts to escape.
2. The *Buteo l. collaris* which I flushed from its nest just before dawn, at the L.B. Duck Refuge, about this same time (see under *Buteo* notes for 1931). This bird flew nearly straight up, ventrally, in a labored,

Calyptrascapus collaris 6.

uncertain fashion.

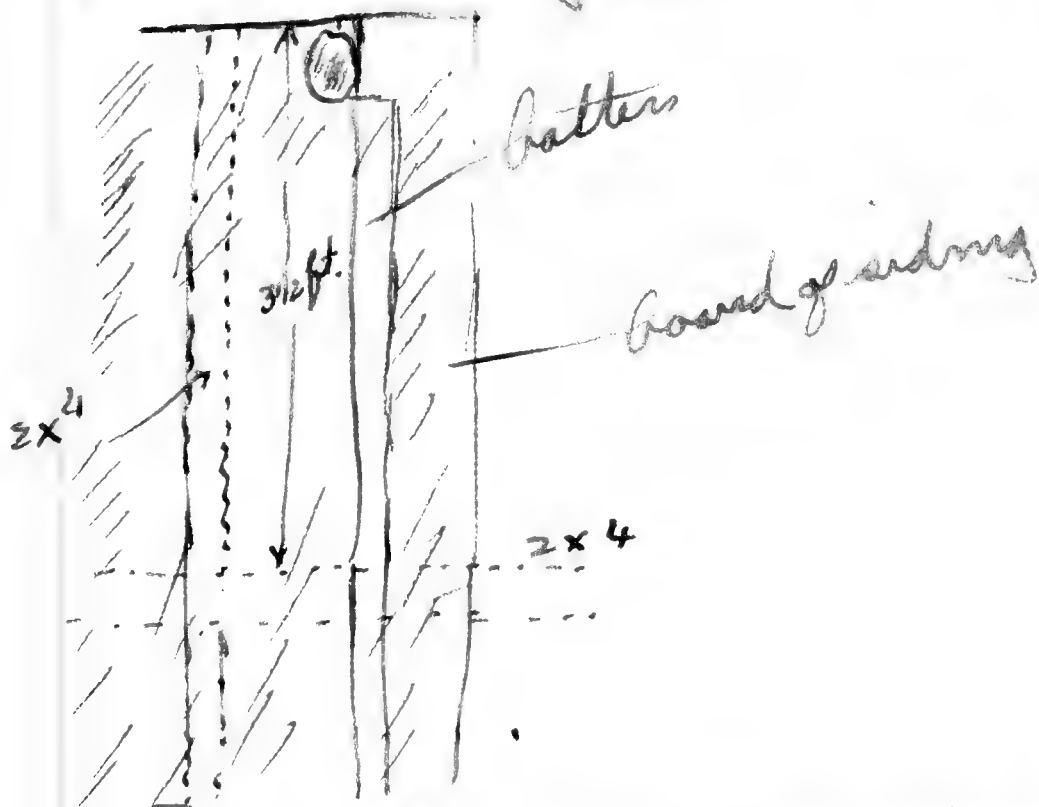
3. The several hundred gambel
sparrows, also jays, golden-
crested sparrows, and ^{owls} ~~owls~~
which I liberated at ~~Claremont~~ ^{Upland}
and La Jolla during the
course of an experiment
with J. L. Collier in 1928 at
Pomona College (see Condor
article). These birds, when
liberated after dark (as was
all too frequently the case)
fluttered uncertainly nearly
straight upward until they
jumped into the pepper
trees (at Upland, that is) above
them. When they grasped
the branches of these trees
they thrashed about until
they apparently secured
a solid foot-hold, when they
immediately became quiet.

Returning to the Alpine
Creek Ranch - 7 miles. They have
drilled another hole in the siding
of the bunk house; a partially
loose bathing which covered the

Calaptes cafer collaris.

7.

cavity, where they drilled & sawed
the the cavity extended downward
about 3 1/2 feet before it terminated
in a horizontal 2x4.



[See also under *Sayornis nigricans*, pp 4-5,
for ^{example} of reluctance shown by domestic
birds to take wing after dark.

April 23/13². Algon-Ranch, quail enclosure. On
the subject of birds not being
able to see at night).

- ① A ♀ Calif. quail which I
liberated just at dark, ^{7:25 P.M.} was unable
to ~~hold her~~ ^{find a} perch when I placed her
among some live oak branches
and let go; she fell with a thud
to the ground (see *Lophortyx* p. 102).
- ② A fox sparrow and some
golden crowned sparrows which

Salpinctes obsoletus collaris.

8.

I released inside my cabin at night, showed a marked inability to perceive objects as compared to birds of the same species which I have let loose in the cabin in the day time. In the day time the birds dodge, run along shelves, fly swiftly past me, and in short, are difficult to capture, at night they seem actually to see less well than I; they fly slowly, never uncertainly in dark corners, after falling to the floor, without finding a perch, sit still upon perching and do not try to elude capture, and in other angular ways appear to be night-blind.

November 24, 1932. Alp. Co. R. Another instance of birds not being able to see in the dark: Just at deep dusk (5:20 P. M.) when the "even song" of towhees, zarobunkies, and others, is in full swing, and birds are showing that last minute activity which is characteristic of roosting time, a golden crowned sparrow going at full speed toward a clump of (introduced) Sequoia

Colaptes cafer collaris. 9.

tree crashed into a recently erected
fence wire (6 ft high; 1" mesh poultry
wire), and fell to the ground,
where he crouched, stunned. Presently
he took wing again and disappeared.
This happened yesterday at the same
hour also.

This is a further example of ^{the fact that} birds which
roost at night can not see well
at night, see a note under
Lophortyx regarding the birds crashing
into fences (Look up in "Index to Lophortyx",
p. 1-389 under "Accidents to quail".)
Also *Certhia sparverius* p. 82

3/1/30

Calumba fasciata

About 8 mi S. of Livermore, Alameda Co. Calif. In foot hill region along creek bottom. Flock of about 23. perched in tree tops.

Jan. 6, 1932

Alpine Creek Ranch, San Mateo Co., Calif. Between foreman house and the lath house - rather open hillside with orchards, ornamental trees and brushy areas. Time 5 P.M.; very early dusk (the sun out of sight behind mountains but the sky still bright). Eight of these birds were evidently going to roost somewhere in the thick trees for they sprang into the air from somewhere as I drove by (I didn't see just where) and after circling about slightly above the tree tops in close formation, started to alight in a nearby tree but changed their minds and flew on in the same restless, circling manner, keeping in the same locality. I didn't have time to stop and wait to see where they would finally alight besides, they probably wouldn't do so as long as I was there in plain sight.

1

Colymbus nigricollis californicus

7/22/30.

Barton Billow Pond, Los Banos Game Refuge
Merced Co. Adult with 2 or 3 young seen
on inlet. Young are about $\frac{1}{4}$ grown, being
about 5" long. One of them caught and
photographed.


5/23/31

L.B.D.R. ponds w. of 3 l.-tower. Two nests,
presumably of this species, found by Dr.
Gayle Picknell and ~~class~~ ^{straggling} in very shallow
water in among marsh grass. It was
a type of grebe nest, and choice of location,
new to me. The nest ^{in each case} was almost on
land so shallow was the water (1-2" deep)
and was in a small ^{grass-choked} puddle at the end
of a long slough-arm which it seemed
to me would have furnished a really
suitable nesting place. One was photographed
by Picknell. (Unfortunately I didn't write down the
no. of eggs at the time).

6/6/31

The above nests are abandoned. The
larger of the two has broken egg shells
scattered about the nest edge and up, some
of them with dried yolk adhering
internally. Some predator must have
done it, but the fragments are too
irregular to tell what - not a weasel or
a snake, at any rate. There are no
fragments at the other nest, and at

Calymenius nigricollis
californicus

may have hatched successfully. Both nests were larger than any gopher nests I have previously seen, and made of marsh grass. They were quite dry and very high, also peculiarly round like. The larger one was slightly oval in circumference outline; the smaller, round.  ~~the smaller, round~~ ^{side view} ~~the smaller, round~~ ^{marsh grass}

Both were covered with damp marsh grass on top to conceal the eggs. I believe these nests to be sand gophers' because I have seen two ♀s with one ♂, in a little bunch, when taking a census 6/3/31

7/8/30

Cornus berachyrhynchus hesperus
Pacheco Pass, N.W. end, Calif. Several
crows seen feeding at edge of road, and one
alighting in tree 30 ft from a camped
automobile where food was being eaten;
very tame for crows; did not fly as I
drove by at 30 ft distance.

9/9/30

15 mi N. of Napa, Calif. Several seen
perched on fence posts and feeding on ground
on hillside. There were large numbers (100's)
of Brewer blackbirds feeding on the ground
all around the crows and whenever a crow
left the ground or fence post to fly to
another location, 2 to half a dozen
blackbirds would rise too and fly
after him, gnawing him and at times
almost perching on his back. The crows
would dodge about but seemed
helpless in the face of this attack.

12/13/30

5 mi n. of San Rafael, on rd to
Petaluma, Marin Co., Calif. Flock of
about 6 in a field.

12/14/30

Opposite Hotel Willets, Willits, Calif.
Several sitting in the leafy trees right
by edge of the street at 7:15 P.M. of a
dark foggy morning.

12/14/30

7 mi n. of Laytonville, Mendocino Co. Calif.
about 11 seen

Corvus l. hesperius ²

12/16/30

Between Alderpoint and Blokesburg,
Humboldt Co. Flock of about 75-100
in oaks on hillside.

5/21/31

Land on n. side of Salt Slough, 1 1/2
miles n. of Las Bajas Duck Refuge, Las
Bajas, Mendocino Co. Calif. Two crows seen
from near at hand, perched in some
willows, and I have frequently on
other occasions seen crows in that
region. Doubtless they nest there.

11/27/31

About 2 mi. south of Mission San Jose,
Alameda Co., Calif. saw a flock of about
20 as I drove by; they were flying low
over ploughed ground away from
the road. In the vicinity of King City,
Monterey Co. they are common,
according to Orben Philbrick, Deputy;
we saw a flock of about 15 in
orchard land near there as we drove
by.

Raven

1

Corvus corax sinuatus

7/17/30

Las Banos Game Refuge, Merced Co. Calif. Two birds seen circling high in the air, round and round each other, occasionally croaking. They moved in a general southerly direction and were very high up. (1000 ft?).

11/28/30

15 mi. S. of Las Banos, 3 mi from nearest foot hills. Two seen on phone pole by roadside.

12/13/30

Ridge between Goshuteville and Elderspoint, Humboldt Co., Calif. 6 seen on open rocky pasture where sheep were being pastured.

12/28/30

Just n. of Wheeler Ridge, Kern Co., Calif. 2 seen on dry open flat at foot of the hills.

Cyanocitta stelleri frontalis

July 4, 1932 Alpine Creek Ranch (Ralph Estate)
San Mateo, Calif. by boat house
See under *Aphelocoma* this date
for general account of conditions.
Today 18 jays were killed. All
were taken in or near the little
plum tree mentioned under
Aphelocoma as a feeding place
for jays.

The stomach contents of the
Cyanocittas were similar to those
of the *Aphelocomas*, so that one
could not distinguish them
without reference to the bird
itself, i.e. stones, vegetable material
too finely divided for identification,
plum skins and pulp, and
insect remains.

One specimen contained what
seems to be a bone fragment,
and this was saved out.

The sex ratio was ~~about~~
equal (unlike the condition observed
with *Aphelocoma*):

9♂ 9♀

Because of their forest dwelling
nature it is not to be expected

Cyanocitta stelleri
frontalis

2

that the *Cyanocittas* would prey upon young quail to the extent (Yung!) that *Aphelocomas* could. These particular ^{*Cyanocitta*} jays, for example, are migrants from the adjacent transition zone Los Hornos Canyon (where Douglas Firs and a few redwoods are to be found). *Cyanocitta* is common in the canyon, but this is the first time I have found it upon the hill sides above. Even so, the tree growth is continuous from the depths of the canyon right up to the plum trees, so their presence there is not surprising, given the requisite attractions (the fruit).

July 7 - One more jay in usual place; at 7.
July 18. Here is a record from E. L. S., Sr.:

"Foreman at Pauling Research grounds (2 mi. Calif.; Berkeley) shot on (May) 9th a Steller's Jay which I had banded in Jan. '31, because he had seen it kill several chickens. Wonder if these jays often do that."

Cyanocitta stelleri frontalis B.

July 19: More jays - 2♂, 4♀. Stomach contents mostly fruit pulp and skins, with seeds next in abundance and insects next.

July 20 More: 3♂

Nov 6, 1932. Another jay shot: ♀, wt 108.4.

I saw this species, as well as *Aphelocoma californica* (see that species, p. 12) carrying fruits of the Calif. Laurel in their bills.

Jan 1, 1933. Alp. Cr. P. These jays get the sunflower seeds from the heads in the same way that the Calif jays (*Aphelocoma*, p. 14) do.

Mar 26, 1933. See under *Accipiter cooperi*, p. 20, for account of a jay of this species being captured by a Cooper's hawk, while other jays mobbed the captor.

March 29, 1933. Caught a large number of this species in a quail trap at the place mentioned just above. The trap was baited with scratch feed. Weights follow.

Sex Wt. Testis size

♂ 121.1 ○



? 102.6 —

? 112.9 —

Mar 30. ♂ 111.7 ○

♂ 116.0 ○

Cyanocitta stelleri
frontalis 4.

Sex	Wt.	Testis size
♂	112.3 42.6	
♂ im	109.5	0
Mar 31 - ♀	106.6	
♀	107.6	
♂	110.0	0
♂	114.0	

April 11, 1933 - See under *Aphelocoma*, p. 23
and following, for a detailed
account of the behavior of two captive
jays, one of them a *Cyanocitta*.

July 24, 1934 Summer ranch, Santa Cruz Mts. See
under *Perchoreis*, p. 126, for account of
sparrow hawk playfully chasing jays, the
latter not being frightened.

Cygnus columbianus

2/15/30

1 mi west of West Butte, Sutter Co.
Flock of about 20 seen flying north
up river. Same flock, perhaps, seen
flying south along base of hills, later
in morning.

2/16/30

Several seen resting on waters of slough
1 1/2 mi west of Marysville Buttes.

Dafila acuta

7/31/30

Ruth Lake, Los Banos J. Refuge - Merced Co. Calif. ♀ with flock of about 8 seen. When I plunged into the water she flew down to the other end of the lake, while the young dove and swam for the reeds along the shore. One young came up at a point at the bank where there was only short grass, and while he was resting there I swam up behind and caught him before he saw me. The ad. swam about restlessly, and flew about also, quacking. Young banded (320780); photo graphed.

8/1/30

Button Willows, L.B. & R. ♀ with 3 young 1/2 grown and another with 1 young, same size.

8/6/30

Many ducks (species not ascertained) are now coming in. Flocks of 75 - 100 are not uncommon on the various ponds.

11/25/30

³²⁰⁷⁸⁰ Band received from Bial. Survey that this bird was shot by L. Libbey, Jr., Middle River Gun Club, Holt, Calif. Oct 29, 1930

6/3/31

Holt is about 48 mi north of Los Banos L.B. & R. "Marsh hawk" marsh while hunting for the marsh hawk nest I flushed a ♀ Dafila from three eggs in what to me seems an unusual

Dafila acuta

2.

site of nest
2 of 1st
nest

situation, namely a place in the dense
marsh grass (covering perhaps an acre)
formed merely by the ducks weight
pressing down some of the grass to form
a slight sort of platform, only partially
roofed over by the surrounding grass. This
was in a soggy place a few feet
from deeper water.

Lawrence & Roy tell me they saw a
sprog with young a few days ago up
by the 3d tower. The young were quite
large; large enough so that they went
out on the bank.

P.M. Some time ago Mc Lellan told
me of a nest by the new duck enclosure,
S.W. cor. of Refuge which I had not visited
before. Today I visited it - nest was a
hollowed out place in the very short
salt grass in such an open spot that
the nest was in no way concealed,
and the sitting bird must have been
visible for a long distance in every
direction. The bird was not on
but the nest was completely covered
with down (dark staty grayish) mixed
with some grass stems. There were
only three eggs in it, although Roy

photo
nest

Dafila acuta 3.

says that Monday it had its full complement of 8(?) which it had been sitting on for two weeks ago. Mc Lellan blames the squirrels, which, he says, broke up a *Cinnamon teal*'s nest near by also.

6/4/21 Watch by the nest of above mentioned *Dafila*

5:10 I arrive. Sun has been above the horizon (= into) ab. 6 minutes but it is only dimly light, or gray, rather. No squirrels out; no female visible at the nest

5:15 The ♀ has been on all night for now I see her long head and neck poked up through the grass, see her look this way and that and then dab around with her bill pulling the down over her eggs, after which she walked a few steps of the nest, gave a jump, and flew over the duck pen and into a tiny little slough, beyond, about 125 ft from the nest, where she began to feed, preen, and relax generally.

She feed for half an hour or so,

much of the time being out of sight in the "rust grass", but during the times when I did see her she fed along the muddy margin (apparently) of the slough, dabbling with her bill in the mud and then every few seconds lifting her head to look about for danger. Often she would stop and stretch one wing and leg (same side), or begin to preen, or rub the side of her head, or even the top, on her back - such was the flexibility of her neck. After about an hour she came out of the grass and stood beside it in the open, near a little ridge of bare earth, and it was remarkable how much well she blended with its grayness so that she looked no more than a bump on it although standing fully upright in the short grass. Sometimes she would preen industriously - I could see her run the feathers of her back between her mandibles - sometimes she would hold one for a moment or let it slip through slowly; now she would pull at the feathers of her lower neck, arching her neck to its fullest extent so that the ~~lower~~ lower surface

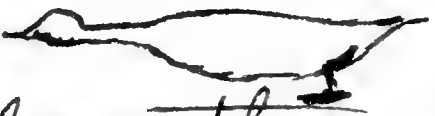
of the bill served to press against her throat, now again she would ruffle the feathers of her flanks, or beneath her tail, or her breast, every now and then giving them a shake. She would frequently rub the sides of her face and back of head against the inter scapular region, so that if she spreads ail with her beak on the body feathers then this is how she might get it on top of her head. Now for a long time she just stands, occasionally waddling nearer - or farther - from the slough, occasionally sitting down for a moment, once in a while returning to the slough to feed. No ♂ has come near her although I do notice one, seemingly unattended, a little farther down the slough.

At about 7:25 she showed signs of wanting to return to the nest by a peculiar, unmistakable fixedness of look in the general direction of the nest and me and by a stealthy waddling from point to point calculated to bring her gradually nearer the nest.





The presence of the car may have made her more cautious than usual, at any rate she would pause for whole minutes and stand motionless eyeing the car and nest (which were more or less in line with her) and then move forward again, with her head lowered. As she got closer to the nest she lowered her head more and more until at last she was fairly creeping toward it - just as I have seen *Edulis* do when leaving a nest at my approach - and just as did a crippled *Breanta* (see under *Breanta*) when I let it go, i.e. with head and neck nearly straight out ahead and

[] tail depressed. Four feet from the nest there was another long wait, then she slipped up to it, dabbed about with her bill unworking the eggs, and then she went on and sank down out of sight, first her head body, and then after a moment of cautious survey her head too. For a while I could see just the top of her head but then it sunk too beneath the grass tops and I think she must have rested her chin on the edge of the nest. This

Dafila acuta

7

was at 7:47. Later I saw a flutter
of wing or tail feathers and think she
turned around to face the other way.
Stopped watching at 1:40. ♀ still
on when I left.

On again at 2:52. ♀ still on
nest

3:12 got half up, so that her tail
was way out of the nest, and appeared to
be poking about in the nest with her
bill; this she did twice, then settled
down again so that only the upper
part of her head showed.

About 3:55 got off without my
seeing her go, I guess, for I can't make
her head out on the nest any more
and I do see a ♀ spring in the
slough where seen this morning.

4:55 Right; the eggs are
well covered with down; 2 look for
incubated, dark with ^{the} large air sacs
showing faintly lighter, the third is
blotched and discolored - internally,
and must be n.g.

5:55 Saw her standing in
the marsh in company with a male.
A blackbird (Agel.) dove at the ♂'s head

up late
account
opening during
this period

under Agelaius
under Catellus
under Erythr. c. c.

Recurvirostra
S. phililogus
Himantopus

I afila aunta

8.

whereupon he ducked and then waddled over to the other side of the ♀. presently they lowered their heads out of sight. The wind is whipping the grass at a great rate, not making it any easier to see through it thereby.

6:45 Sun still up but wind blowing cold, shadows lengthening out across the grass. ♀ seems to be getting restless - made a little trip out of the marsh - short walks with many pauses, - and then walked back into it again; she keeps looking toward the nest, with head held as high up as it will go, neck long and snaky. The ♂ I don't see any more.

6:53 Bird is simply standing, waiting, hesitating, rather.

~~Like~~

7:07 bird gone back to the marsh; I leave.

The cook tells me that yesterday about 4:30 he looked at the nest - the bird was off - and there were 7 eggs, covered with down, all proper enough. I went by at about 5:45 (only 1:15 min later!)

and find the nest covered (but no bird) and only three eggs. That means that whatever took the chicks after 4:30 and yet soon enough after that the ♀ could come back and cover the eggs again (we can hardly believe that she ~~that~~ would do this) and then leave before my approach. - After supper the cook says he went out and found the nest as I had found it, with the bird not on.

Mc Lellan says that 5/2/31 he saw 9 young ones "nearly half grown" which crossed over by land from one slough to another.
6/7/31 L.B.D.R. Can you heat it?! The *Dafila* by camp, formerly with three eggs, flushed from only two! Do snakes eat one or two eggs and then return, I wonder?

6/8/31. Nest watched previously (all day) no eggs there now - cook says none last night - and down somewhat scattered. Something must have got in for if they had hatched the 3d (rather) egg would still be there; also there were no shells or shell fragments - all this points to snake work again.

hatched
nest

Dafila acuta

6/11/31

Nest of three (and then two!) eggs
by 3rd Butte camp. 6:30 P.M. No
bird and no eggs - just the nest.
Of course the last two eggs may have
hatched, but I suspect a snake
of merroung them, since there were
no shell trays.

[continued on page ~~10~~¹¹ (blue)]

Dafila acuta

11

9/14/31

Colusa Outing Club and Serrator Jun Club, near ~~Coler~~ Williams, Colusa Co., Calif.
In response to complaints of duck sickness the C.F. & J. sent me to investigate.

Colusa Outing Club - Walter Myers, keeper. Myers and another man with him showed a minimum of interest and said that there had been less duck sickness than in other years and not enough to matter much. We went out (T. P. McCabe and I) on their land and saw the remains of dead ducks by the hundreds in just a few hours tramp. McCabe counted some 600 altogether and I saw 189 others myself. He went wading waist deep beyond the tule fringe, in the lake, and says there were hundreds of the ducks lodged against the tules on the lake side (upward side), making a most spectacular sight.


I myself stayed on shore and picked up as many sick ducks as I could catch when they were stranded, or had voluntarily come up to the banks to rest. Most of them were so weak that they could be picked up with ease although out of the 35 or more seen perhaps a half dozen still had strength enough to flounder back into the water upon catching sight of me and swim off. Every where along the shore, and on the adjacent mud flats, in some sections, there were carcasses of ducks, or the remains of them. Although we saw the tracks of but a single dog, and not one predatory animal, on the extensive mud flats, the carcasses of the ducks were nearly all ~~eaten~~ up picked clean - some very foully. As a matter of fact it looked more like predatory bird work, for the

13

Dafila acuta

the bones were picked clean and left nearly intact rather than being chewed up, and the wings were in nearly all cases either right nearly or else still connected.



The ducks which we picked up were weak and apparently partially paralyzed in the hind limbs. Especially noticeable in many — and these were in all cases the strongest and most vigorous — was the protruding ^{very watery} eye with the nictitating membrane a swollen whitish patch at the in (forward) corner of the eye  and partly covering the iris; these birds, as well as the sicker ones, in which the eye was unken and dull (only watery in some ^{of the} cases) were able to see us and try to escape. In some of the birds — most of the sicker ones in fact — the eye seemed nearly normal.

McCabe was of the impression that the sick ducks went into the fringes of

Dapila acuta 114

the tule patches for refuge, and died
in there mostly, being washed to shore,
in the cases where they were found on shore,
after death. My experience, both then and
previously, was that although many had
died in the tules - perhaps before they
could get to shore - yet many others
deliberately left the tules and crawled up
onto the muddy bank to die - even when
they were in the last stages of the sickness.
This was noticeable in several instances
(here and in previous experience) when
sick ducks left the shore at our approach
and took to the tules but then sneaked back
to the shore and crawled there when they
thought we were gone. The dark tule clumps
deep water seemed not so attractive to
them in extreme weakness as the solid, and
probably warmer, terra firma. A few (2)
remains of stilt were seen, and the men

said they had seen a number of dead
ones a few weeks previously, but no
other shore land remains were seen, although
several flocks of least sandpipers were present and
50 or 60 killdeer and seemingly healthy.
The Buzzard was flushed from the ground and
had evidently been feeding on a carcass, and
marsh hawks were common - they being
responsible, I think, for most of the pulling
of the car cases. One dying mud hen and
four or five ^{mud hens} car cases were found; green-
winged teal numbered about 3 to 5 as
compared to pin tails, with a mallard
two or three in a while. The geese have
come down, as the men said, and they
handed me one white fronted which they
had pulled up in a condition similar to
the ducks and had put it into one of their
pens; we saw no geese or swans, however.

Dafila acuta

In the pens by the club house were
were an eight ducks which the men had
brought in earlier and furnished with fresh
running water. They exhibited characteristic
symptoms - undoubtedly no doubt by the
fresh water and change of environment - of
analysis of the lower limbs, hopping-flapping
at when trying to escape, etc. The men said
they were gradually getting better and that
none had died from this lot since being
transplanted, although other lots had often
shown high mortality.

The peculiar feature of this area is
the water is flowing into the marshes quite
steadily and rapidly
and has been ever since it was turned
out the land about Aug 1. The land was
practically dry before this, though, and

Dafila gauta

may have furnished opportunity for
a tremendous development of ~~Bo~~ *C. asterium*.
We think that the ducks must have perished
to the number of several thousand, perhaps
more, within the last month or so, but
now they are not dying so extensively.
relatively few sick birds were seen, and
we were a hundred or more healthy birds
in the marsh - although these latter may
have been new arrivals on the scene. The
area which we covered was only about
10 acres in extent, leaving about ten times
as much of territory totally unvisited; it
must be assumed that there were ten times
many dead ducks as we saw, from that
evidence, for it was noticed even in the
places where we did go that ducks were
absent altogether from large areas - areas
usually separated by a single "check" from
the infected areas as mentioned above.
Later - man at the A. D. J. Land Co.

Club says that all the water of this section comes from the rice fields and is stagnant, and that water for the group of clubs across the river (Butte Lodge, White Mallard, etc) comes from Butte Creek which is also stagnant. The appearance of freshness due to its running, then is deceptive.

This man (at a D. J. Land Co) says that in 1927 (he thinks) they had a very severe outbreak, and at that time he rescued nearly 3000 ducks on his land by bringing them in and placing them in pens with fresh running water. Said all the people of that region said he was crazy to take this trouble, and this shows the general attitude of nearly all these people; they won't lift a finger themselves, and they prefer not to be visited by investigators from the Commission force. at the White Mallard Club - Said they

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had never been ^{Dafila acute} troubled with duck disease because the water from the rice fields did not come through their property; Butte creek, from which they do get water, is not stagnant but fresh and running at that point. The rice water had flooded the Butte Lodge place, adjacent, and we heard from two sources (two sheep handlers and a blackbird shooter) that "something was the matter with the ducks" there, although we saw no direct evidence of it ourselves — chiefly because we didn't have time to ^{hang} along the edges of the lakes there. There were several thousand ducks, and several hundred white fr. geese on these same lakes but they seemed as yet to be healthy and vigorous.

Dendrocygna bicolor

1.

5/4/31

Los Banos Duck Refuge, Los Banos,
Merced Co Calif. ~~East~~ West of 3 l-towers.
A flock of about 14 seen resting on
shallow marshy floodland area. These are
the first seen this year (last year only record
is in 1st census taken, with Cheney).

5/31/31

L.B.D.R. near 3 l-towers. 2 seen flying up from
the marsh there.

6/3/31

3 times this morning I have seen 3
of these birds pursuing each other in wide
circles over the marshes, uttering their
peculiarly un duck like cry of 'wip-dee-ah',
wip-dee-ah in a high pitched tone such
as one might approximate by blowing on
a grass blade held between one's thumbs;
must be the pairing season for these.

Spondraia aestiva
lunata

1.

5/22/31

Los Banos Duck Refuge, Los Banos,
Merced Co. Calif. Mud Slough near
pond. A ♂ seen moving about in a
willow in shady place.

Dryobates pubescens harrisi 1.

4/27/31

Los Banos Duck Refuge — just across the
line, on Mud Slough, in Kaufmann's
Ranch — Los Banos, Merced Co. Calif.

A nest of this species found in a partly
dead willow branch which had blown
down but was still partially adherent to
the trunk at its base; 15 ft above was
a Redtail nest. There were young in
the nest and I saw the old bird
bringing what must have been
an insect.

Egretta candidissima candidissima 1.

5/22/31

Los Banos Duck Refuge, Los Banos, Merced Co. Calif. One bird seen flying to a slough by 2nd Butte Camp. This is the first one I have seen myself, although Mrs. Pinehart says she saw one (day Perched Butte tower); and J. S. Hunter said he saw several last year.

Late - 6 seen by Salmon Slough overflow.

5/30/31

L.B.D.R. by Salmon Slough over flow - They are still about, in 2s and 3s as seen previously; one also seen by 3d tower.

6/4/31

L.B.D.R. two walking slowly along a little muddy rush-grass grown channel, only their heads showing, at intervals above the tall grass, the ~~was~~ ^{are} loose ruffles up their top linings so that they stand out very erect and white in the early morning sunlight. Every now and then the hindmost one overtakes the foremost as it stops to feed, and makes a little rush at it with beak held out threateningly, upon which the latter hastens out of reach, and so all over again. I don't know what this means; why does not the attacked bird fly away. Perhaps, however, this is a good feeding place.

6/11/31 L.B.D.R. "cayote pond" s. side Refuge. The snowy egret along with smaller size has less majesty of movement than the gr. ab. heron and am. egret in its feeding methods. The larger birds feed by stealthy sly, high stepping, approach followed by a sudden thrust of the bill if anything is seen; their object seems to be to avoid observation on the part of their prey and to ~~seem~~ simulate a snipe as much of the time as they can. Not so the snowy; he has the same jerky step, marked by a ^{forward} jerk of the neck as each foot is set down, but he rushes about here and there while feeding, turning this way and that erratically, often actually running for a few steps, with half open, flapping wings to help him along. Often while zigzagging about he will open one wing and give it a sort of flutter, or sometimes even a flap, on the out side of the sudden turn. This may aid him in making the sharp right face (or left face) that he uses in his feeding but it also serves to make him more conspicuous and serves, I believe to alarm the surface feeding water

insects, paddy wags, etc which he is after - and this, I think is his object to stir them up and make them show themselves as they best to escape. Often he will dash about in this erratic spasmodic fashion for quite a time without once picking up anything (or trying to), and so it is not to be thought that he is actually pursuing something which is constantly eluding him; rather it is as I said. All this is totally different from the stalking methods of the two larger kinds.

Euphagus cyanocephalus 1

4/2/31

Los Banos Duck Refuge, Los Banos
Merced Co. Calif. Muddy Slough by
redtail camp. One-half hour after
sunset (7:10 P.M.) a flock of about
five frightened out of a willow
at the edge of mud slough.
Although it was light enough
for me to see the birds
distinctly, they were at a much
greater disadvantage than I.
Two fluttered off, two
more fluttered about in the tree
five feet from me but seemed
not to know where else to
go while the 5th blundered
off and lit ^{on the ground} in a clump of
rushes next to the water. It
stayed there until I walked
by there 5 minutes later when
it rose, blundered across
the slough, and ran blindly
into another clump of
rushes as in the first
case. Here the bird stayed as
long as I observed it although
such a roosting place was
very dangerous in account
of predatory animals.



Falco columbarius

1.

Aug. 6, 1932 Indian Head Lake, (Barberville P.O.), British Columbia. Saw one of these birds first perched on the top of a spruce, and then later, fighting with a marsh hawk. In the afternoon Mrs. McCabe also saw (what was presumably) the same bird, thus confirming the identification. When I first saw it I noted that whereas it had the shape and manner of flying of a sparrow hawk, it was much darker, being blackish, in fact. Also, its note was different from that of a sparrow hawk, being a single (rather frequently uttered, however) kee, instead of the rapid kee, kee, kee, kee, of the sparrow hawk. The tone quality was about the same, but the note of the pigeon hawk was, I think, somewhat more drawn out than any single kee note of the sparrow hawk.

- A few minutes after losing sight of this hawk I saw him again, this time having the fight (or was

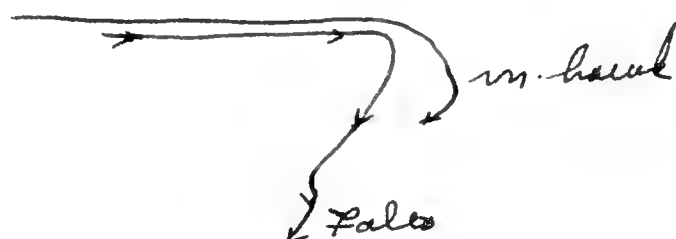
Falco columbarius 2.

it play actively perhaps? with the marsh hawk. First the Falco was seen diving from above, down at the Circus, in the same way that I have seen red tails swoop at eagles:



The marsh hawk, however, was not content with passive dodging. He flapped, with evident effort and purpose, higher and higher into the sky, pursuing the Falco, who also flew higher in an effort (I suppose) to keep its superior altitude. At length the Circus was right behind the Falco, and pursued him swiftly, turning each time the smaller bird turned, now darting downwards and now rising higher once more. All the time he was getting closer, until he was only a yard or so behind the smaller bird, and I looked every moment to see him catch his quarry. At the last moment, however, the Falco executed a hair-pin

turn and left the mouse clumsily turning marsh hawk far in the rear :



Instead of taking advantage of his mouse and retreating, however, the *Falco* rose above his antagonist and again swooped at him, making the marsh hawk dodge and zigzag southwards to escape his rush. Then the whole thing repeated itself, the marsh hawk flapping to gain altitude, getting close as before, and missing, also, as before. For a while after this, the two coiled ^{high in air} again then were at it again. Once I thought I saw the marsh hawk turn completely over and approach his talons to the pigeon hawk as the latter swooped upon him. After about fifteen minutes the marsh hawk and pigeon hawk sailed steadily up the lake and out of sight, the

Falco columbarius

4

marsh hawk beneath, the *Falco*
above, neither one descending from
a straight path. It looked as though
the pigeon hawk were driving the
other out of his territory after a
successful bout with him.

Aug 7, Indian point Lake - at upper end. Sat in
the canoe within 150 feet of the same
(perhaps?) bird for several minutes.
It was perched near the top of a 20 ft
spruce, growing at the edge of the
marsh, and was just sitting.
Confirmed previous identification with
X12A at 150 ft.

9/19/30

Falco mexicanus

Las Bajas ^{Dyke} Refuge, Merced Co.
Calif. S. side of Refuge. Bird first seen
perched on ground; as I drove nearer it
rose and flew away so that I lost sight
of it while it was high in the air.
(See page 2 for continuation).

2

Falco mexicanus (?) [I think this was
mexicanus because it looked distinctly brown]

11/28/30.

S. e. cor of wire fence near Salmon S. beef,
L. B. Duck Refuge, Los Banos, Calif. 1 bird
perched on fence with feathers fluffed out, in early
morning sun. There were 6 brown blackbirds
and 2 larks perched in several groups
on same fence, the nearest being about 15-
20 feet from him, with others flying
about in the air near by - but none of
them seemed alarmed. Presently the bird
rose and flew slowly to another post and
lit, passing in its course two other
perched blackbirds. Although it seemed to
pass directly above them (they were on 2nd
wire from top) they seemed not to be
alarmed. Later this falcon moved again,
and as a flock of brownies flew by,
3 or 4 dropped out, turned to one side,
and swooped at the falcon in characteristic
manner.

9/9/30.

Falco peregrinus anatum

L. B. Jones Game Refuge, Mendocino Co. Calif. Ruth Lake (See census). One bird after ~~not~~ sailing leisurely high in the air and swooping down in pursuit of flocks of ducks which we scared up. The hawk seemed to be doing this purely in play for it did not come very near any of the ducks although it could easily have done so. The ducks, on the contrary seemed alarmed for they kept down very close to the water, and in moving from pond to pond settled hastily and especially so when the hawk came overhead.

11/27/30. L.B.G.R., west side of Ruth Lake - on fence post. A sparrow hawk dove at him twice, whereupon he ducked his head but offered no other resistance.

5/8/31 L.B.D.R. by 1st Butte camp - late twilight (7:05 PM). As I drove up the road my attention was suddenly drawn to a falcon by the loud rasping cries which he uttered - just like those given when you rob the nest. He made a complete circle about me, about 125-150 ft up in the air and then kept in the vicinity

Falco peregrinus curatus 2.

still crying. Guessing at last that he must have been disturbed from some nest by my approach. I hurried on up the road, stopping about 200 yds away. I vividly had come to a stand still when I saw him come down to the ground in a long grand sweep and commence tearing at something. Immediately I drove pell-mell over there - he rose and complained as before - and found a limp warm mud hen, slightly bloody, and wet, lying on the clay flat about 15 ft from water. It being wet, indicates that it was in the water a moment before and yet, if the falcon could remove it from the water why could he not take it with him when I came up - I left it there, drove at topmost speed a mile south - grabbed six traps and speed back. The falcon rose this time and flew straight away with no more ado. The mud hen had been torn open and its head separated from its body as well. The two traps lay it but the bird did

✓ *Falco p. anatum* 3.

not return again that evening (It was nearly dark by that time). Nearly on the banks of Mud Slough, 20 ft from water, a close little bunch of 15-20 mudhens were standing, apparently curious and alarmed.

Fulica americana

2/21/30

Lake Merritt, n. end, Oakland Calif.
Large numbers of pintail (wouldn't swear to identity
of ^{this} species because notes not written until now) standing
about on the muddy shore, preening and dozing.
One or two were observed to defecate and
immediately a couple of coots which were
standing next to them, turned and pecked
at the excrement as though devouring something.
This was very clearly seen. Perhaps they were
eating intestinal worms of the pintails.

2/22/31

Los Banos Duck Refuge, Merced Co., Calif.
An account of efforts to trap these birds:
Traps set up during 2/22-23/31, and baited.
The coots are extraordinarily abundant (see
censuses). At this time of year the
new green grass, alfalfa, etc. etc.
(see botany collection) is springing up
all over the refuge, giving the entire
country a green appearance. It is
still short, but very succulent, and
has attracted the coots throughout
the refuge so that they leave the
water, and spend most of the day-
light hours in compact flocks
and feed and rest on the banks
adjacent to sloughs and pools. This
green stuff makes it very difficult

Fulica americana

to attract the coos with our grain bait (whole barley). They will eat the barley, if they happen to be in that vicinity, but are not drawn to it from all quarters, and in fact are usually found feeding in different places on different days, whenever they happen to have been the night before - since the green young shoots are everywhere.

2/24/31 A few coos have entered the traps, but in each case they are the least timid minority of each flock. The grain scattered outside the traps was quickly found, but as the coos are afraid to enter in most cases. They hang around the immediate vicinity, sweeping my back and forth in front of the opening, but most are afraid to enter, and those which do, feed right by the entrance. As soon as a car or a person on foot becomes visible, even at a long distance, those inside hastily run out, and the whole flock quivers off to a distance from the trap.

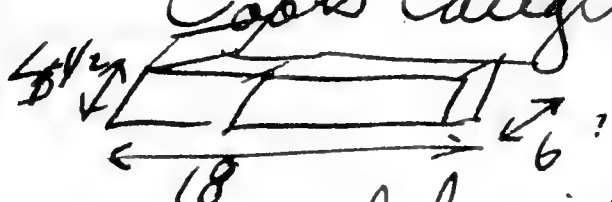
I stayed from 2/24 - 2/28 pending
this, with no trapping.

3/1/31 A number of coots have
been caught, never more than
25 - 30 at a time and usually in
smaller numbers. The majority of
each flock still refuses to go inside
the traps. Since their capture is
always followed by the appearance of
a car, or a human being on foot,
the coots have quickly formed an
association between such appearances
and danger, as a result, although
there may be a number of them
about any particular trap, they
invariably hurry away the instant
anyone appears, even from far
away. Ordinarily, the coots on the
refuge are not so suspicious, and
one can usually drive up within
15 - 20 ft of a flock of them before any
alarm is shown - even when they
are on land. It is definitely the
result of trapping which has brought
about this wildness.

3/2/31 Coots are getting migratory;
Early in A.M. - while watching a flock of
them swimming in Mud Slough there

was a nearly continuous noise splashing and "cooting" (or however in hell you would describe their noise). One bird would lower its head, with crown feathers depressed and bill barely out of water and swim rapidly at one (or two or three) others nearby. They would splash, flutter and swim to one side with the pursuer also fluttering now in its haste, but as soon as they had fled for two or three feet it would quiet down, raise its head, and swim about like the others.

3/7/31 (Interval of two days preceding this with no trapping) ..

Coots caught in the wire traps
 can squeeze through

an unbelievably small space, as through 5" (so called) fish netting (5" mesh measured from opposite corners when stretched). They can also climb straight up fish netting by flapping with their wings and clanking with their feet; this they do quite easily.

3/8/31 Three coots saved for deers

and their wings clipped. When held by the legs they jerk at ones fingers, legs or any other part with which they reach, in a vicious manner with their bills. Those which had been deprived of their wing feathers flung themselves on their backs and kicked out viciously with their feet, just like a young hamper, although as a matter of fact their claws are not very sharp and inflict no hurt. One bird, which had just been doing this, when held by Mrs McCake quietly for a few minutes, drank from a ~~pot~~^{pan} of water for about a minute ~~without~~ while being held, showing that it must have been quite thirsty (it had been panting) and that Quail was in this case able to dominate over fear.

Coots are very careless in their activities at this season. Several just trapped were flapping about in the trap just after the pull wire had been jerked and I was approaching. Their actions very

Fabia americana 6

incidentally attracted the curiosity of their fellows who had not been caught. For these latter, instead of retreating at my approach as usual, kept swimming about restlessly near the trap until I was almost beside it. Even then they did not go very far off, and when a few minutes later I left for a few moments, with the captured gosh still inside the trap, they came back again.

So too, according to Mrs. McCle, when a hawk(?) pounced upon and killed a coot from a cove of a flock by the 3^d. tower the others after the first rush from the bank into the water stopped and swam about close by, eyeing the hawk with its prey, and making no attempt to get farther away.

The coots seem to feed and remain active throughout the day. They can be heard calling at night as well, but it seems possible that they may rest more at night than during the day, judging

Lulua americana ⁷

from the amount of activity which they show in the daylight hours.

They are very keen of sight, as shown by the flocks which are feeding in or in front of traps of which they are apprehensive; if the operator shows himself for an instant they beat a hasty retreat nearly every time. To day this happened when I threw a trap at Holt's place. All the birds left the immediate vicinity of the trap as I came in sight. Just then I got a flat tire and stopped to repair it in full sight of the waking coots. This took half an hour, with no little activity and noise, however, during that time most of the coots drifted back and some actually entered the trap — as though they were able to distinguish between further stalking movements of an enemy and noisy but less suspicious activities of a harmless individual. (Just to fool them, however, I pulled the wire and got two when

Lalua americana 8

the time was at length patched).

Coots seem not to be banked wires when in flight. Today I saw one take wing from a liana and bump into the next-to-top wire of the fence; it did not hit squarely and so kept on in its flight apparently none the worse. Ethel saw one hit the wire and fall to the ground; it too was not hurt seriously, apparently, for it took wing again shortly after. One other bird which I saw a day or two earlier ~~to~~ was hanging dead on a wire, suspended by a barb just behind ramus of lower mandible.



3/9/31 Coots still very shy of traps and people; in one case they have completely left vicinity of the trap.

3/10/31 Shyner shown by retreat of coots from "half over" trap at camp just as soon as I showed my head over the horizon when climbing the 3rd tower 250 feet away. They refused to enter

Fulica americana 9

the lane of the "halfover" trap except the last 6 ft of it by the water.

This H. M. when passing a small slough, a flock of about 20 mud hens which were 100 yds away left the water at my approach and flew overland in a wide circle. Some of them went on to another slough, while the remainder circled completely back, passed over the place where they had flushed, and settled nearby. Ordinarily they would not flush from water at 30 feet if I merely walked by them. This may possibly be an indication of approaching restlessness.

3/15/31 L.B.D.R. by 3rd tower. The coots by the "halfover" trap are just as many as ever, in spite of a cessation of banding activities since 3/10/31. Today I spent almost entirely on the 3rd tower. At my first appearance, as I climbed the tower and became visible from the trap, all the coots made for the water; so did nearly all the coots on all sides within 200 yds of the tower. In an hour or so they all became

Fulvia americana

used to my presence there and came back. Those by the trap even came up nearly to the other end, most of the grain having been cleaned up elsewhere.

3/16/31 Same place. 7:30 A.M. Some of the flock are as much as 150 ft from water and so long as I remain inside the tent continue to feed without apparent uneasiness. As soon as I put my head out the door however they all run and fly toward the water. At one of the traps, while driving by with my Ford, I noticed about 8 inside. As soon as I stopped the car - before I even got out - at 150 yds they all made a rush for the water. In contrast to this behavior, where they have learned to associate our presence with danger, is the actions of the large flock which moves about unconcernedly within 100 feet of the main shack, where there is a dog, and a number of people moving about ^{in the yard} nearly all the time, but where they have

Fulica americana

never been molested.

3/17/31 7:30 A.M. by tent, vicinity of 3 l.

towers. About 25 coot up on the green flat 100 ft from the tent (100 ft from water in the other direction, also), moving about, feeding busily, in scattered groups. They do not usually take more than a few pecks in a spot, ~~but~~ and as rule walk five or six steps after this before pecking again. Because they invariably lower their heads and appear to "reach in" after whatever it is they are eating, instead of simply standing still and plucking - and because although they raise their heads immediately after each peck I can never see any thing sticking out of their bills, or make out more than a single swallowing movement of the bills - I think they are picking up very small objects, and not pulling green grass. There is a tremendous swarm of ^{small} gnats everywhere and perhaps it is these that they are eating; I can see them flying up as the coots move about. When I

hissed and shouted - without moving - inside the tent one or two craned their necks for a moment but most of them kept right on feeding without looking up. When I waved a white handkerchief inside the tent the majority of them looked up and then started to move toward the water, although still feeding. When I got up myself and went to the tent door they hurried faster and as I stepped out they all ran and flew to the water.

One coot was seen several times to lie down on its breast and feed within radius of its neck in front of it (this was just before I scared them).

3/22/31 L.B.D. Refuge. Today the wind blew from before dawn till evening - hard and steadily, and seemingly because of this there were much fewer coots out on the banks eating grass(?) or insects(?) than usual. This I noticed because I wished to shoot three for stomach analysis and although I went to the usual places, where they are always to be seen feeding on shore, I found none, but

found them in the water close to shore, and generally out of the wind instead. Particularly was this true in the morning, but in the middle of the after noon, when the wind had slackened a bit, they came out more and I got three, 2 ♀s and a ♂.

It is interesting to observe that we get some repeats on banded coots (see McCalie's records).

We are painting them now (from 3/21/31 on).

3/26/31 L.B. & R. Another windy day as bad as ~~before~~ to the previous one. Coots out on banks some but not so much as on ordinary days. They tend to stick in the hollows where the wind is less severe.

3/23/31 When carbon tetrachloride is put on the heads of the coots, in painting it makes them "pass out", momentarily, on account of the lowered temperature. E. L. Sumner described the reactions of about 15 coots which all acted this way when he painted their heads. A moment after being painted they sunk to their feet, raised and pitched forward so that the point of

Fulvia americana.

their bills touched the ground, and then, continuing to relax, they slowly leaned over sideways until almost prone, after about a minute in this position they began to recover, slowly straightening up until erect, when they made off with all normal vigor and speed. A. D. McEllan told of a similar happening at the Pinal Duck Club, Newark.

4/12/31 L. B. D. Refuge, see under Buteo l. calurus p. 31 ^{Camp 26} for uneasiness of mudhens as this hawk appeared high in the air.

4/28/31 L. B. D. Refuge - 2nd Buteo camp. Mudhens can tip up just like ducks in shallow water for I just now saw two doing it simultaneously; one of the birds was tipped so far that its feet were almost entirely out of water.



Water level.

4/30/31 Locality as above; tipping activities as above; seems to be common. Another illustration of mudhens behaving on sight, not sound: I had pitched my tent last night within 10 feet of a piece of flooded land where the stilts and mudhens were abundant. This morning I saw the mudhens in

numbers as close as ten feet to my tent and although I moved about in side of the tent they were not alarmed in the least; as soon as I stuck my head out the door however there was a great splashing and flapping accompanied by a general exodus (See Falco p. aratus p. 12, 3).

6/2/21

Z.B. & R. south fence



Two

dried bodies hung up on the banked wires into which they had blown!

6/3/21

Another similar accident along Mud Slough where it forms the west boundary.

Gallinago delticata.
Wilson Snipe

- 7/8/30 Las Banas Game Refuge, Calif. Mud Slough -
Early evening (7 P.M.) 5 birds feeding in little
compact bunch, prowl in shallow water.
- 3/9/31 Las Banas D. Refuge Calif. Vicinity Mud
Slough. Several flushed. Reported by Alden Miller
- 3/26/31 L.B.D. Ref. Vicinity of Olson Pond. One bird
flushed from muddy margin of a ditch where
sedge was growing thickly.
- 5/7/31 L.B.D. Refuge - one seen by Buttonmuller
Damm.
- 11/15/31 Okell Ranch, Garden Valley, Napa
Co. Calif. Little trickle of a spring
that oozes down a shallow gulch // to
the road which goes from the barns
up into the hills. Two snipe were
shot there by Okell's friend - of all
places to find snipe! The water
was nothing more than an ooze,
or trickle, which, after coming
out of a pipe and dropping into
a cattle trough, seeped over the
edge and down this shallow
gulch - or ditch, really - towards
the farm buildings (200 yds
away). The water was standing
mostly in the hollowed foot prints
made by the cattle in the mud.

Gallinago delicata

2.

and there was hardly any vegetation at all - just a little grass etc growing at the edge of the tuckers and no weeds along the banks of the chills at all - and no trees but a few willows around the trough itself. Of course this tucker was a permanent one - as I saw this summer.

7/8/30.

Gallinula galeata

Los Banos Game Refuge, Calif. Mud Slough.
near place where nest seen 5/28/30 (see under
L. B. Bird Census) bird ran along dry part
of creek bed, swam into water and disappeared
down the creek.

1

Geococcyx californianus
6/22/30. Berkeley Hills, near Wild Cat Canyon,
on road along ridge over Losung
reservoir. Bird on top of fence post,
fopped off when we drove by.

11/3/30 Arroyo Mochla (n. of Mt. Hamilton),
Alameda Co. On road about 12 mi from
Livermore - one bird seen by roadside.

Dec 28, 1933. See under *Lophortyx c. californicus*, p. 635,
for account of roadrunner eating
Calay quail.

Geothlypis

1

3/1/31

Mad Slough, Los Banos Duck Refuge, L.B.
Merced Co., Calif. Bird climbed up from
angle of Pikes and willow shoot at
base of a 20 ft. willow and ate small
insects (spiders?) from interstices of
twigs nearly at top of tree - in same
habitat normally occupied by audubons
warblers. It only stayed up there about
one minute and then descended. Willows
not yet in bud and very bare so that
they afford but little concealment.

Crane

Gulls

2/22/31

Los Banos Duck Refuge, Merced Co. Calif. Near three light towers. One bird circling high overhead.

2/23/31

Numbers heard (later 8 seen) about 1 mi. N.W. of N.W. cor of Refuge. 3 P.M. 10 seen & heard high in air, sailing and circling eastward.

2/24/31

About 12:30 P.M. About 4 scattered flocks totalling about 50 birds in all seen flying in wide irregular circles, make characteristic noise over E. side Refuge. About 15 min. later, when I looked again, they ~~to~~ were all alighting together near some Snow Geese just outside N.E. of Refuge Mrs. McCabe (Eaton B.) said she saw 200 while being hidden in tules in another part of the Refuge this same afternoon.

2/28/31

L.B. D. Ref. On east side of east boundary - 26 seen and heard, flying about 200 ft from ground south.

3/1/31

L.B. D. Ref. 6:30 A.M. a number heard on east side of E. boundary.

3/2, 7/31

Numbers seen - same place

3/8/31

Noon. flock of about 100 in air, sailing and "crouching" more on the ground. All were on extreme east side refuge.

grus

- 3/14/31 L. B. D. Refuge by 31. tower. These birds can be heard every day, over on the east side of the refuge, where they are to be seen in groups of 1 doz to 500 feeding and resting.
- 4/3/31 Have seen no cranes since last census (see date of this); they must have migrated.

Gymnogyps californianus !

Sept, 1934. Summer Ranch (N.W. $\frac{1}{4}$ Sect 17, Twp. 7S, R 3W) San Mateo Co., Calif. Mr. James Rapley, Sr., who came to live on the ranch adjoining mine when he was a small boy (100+ younger), more than fifty years ago (he is now about 72) said that a few years ago (perhaps 10) he saw a California condor sailing over the ranch, it being easily recognizable by its great size and its markings. His wife saw it at the same time.

Helminthophila celata lutescens

Lutescent Warbler.

4/5/30

Strawberry Canyon, Berkeley, Calif. Upper road. Alarm notes given from shrubbery, indicating establishment of nest territory. Gurnell says birds heard singing last week (Sat). Fragment of a song heard this time. Although we have been listening $\frac{1}{2}$ hour there are no songs. Gurnell says that birds have passed the singing stage. Says they nest on or near ground in vine-covered banks. Call note Song heard one - a weak, rather musical series of trills, slightly descending scale, rapidly uttered. Seen and observed at close quarters. Bird moved about from tree to tree, ^{singing} but only about half as much as a *G. pileolata* would have done.

Himantopus mexicanus 2

before I caught the bird.

4/2/31 L.B.D. Refuge. Stilts heard calling after dark from near redtail camp; this is the first record for this year.

4/3/31 Large stilts seen near 3 l. towers on flood lands.

4/11/31 L.B.D. Refuge. Stilts are now common on all the sloughs.

4/28/31 L.B.D.R. 2nd Redtail camp. Stilts spend hours out in the tall grass many feet from water at times, feeding. By tall grass I mean up to the stilts bellies or a few inches higher.

Later in same day - near "entrance" to 2nd Redtail camp off main road. A Stilt nest with four eggs built on one edge of a small ^{grassy} ~~rock~~ island formed by flood waters. The nest is made of twigs and bermuda grass roots, is quite compact and is built up $1\frac{1}{2}$ inches above the water (edge is $1\frac{1}{2}$ " high, that is), with a $\frac{5}{8}$ " cup. Total diam nest 9".

photo of nest

4/29/31

photo of nest

I had left the camera by the nest since yesterday, hoping to get a picture of the sitting bird, but the birds were afraid to go

Himantopus mexicanus ³

to the nest so I had to remove it. I suspect that they will desert permanently.

This P.M. Miss Rinehart found a nest about 35 ft from the road paralleling Salmon Slough. It is in water apparently 18" deep - a nest made of floating vegetation in a flood land where the water is quite deep and where reeds, rush grass, etc. is beginning to grow rather thickly - the nest being near but not in, some of these clumps. It contained 4 eggs; the bird not flushing until I stopped the car opposite the place, and remaining in place on the nest when I spoke. By several times. I put up a "dummy" camera 20 ft away and left.

5/5/31

L.B.D.R. 2nd Butte camp.
after dark. Using a 1200 ft beam flashlight I walked into the water and waded slowly right up to a bewildered stilt and bending down caught him by the legs. At first I had been 30 ft away on the shore but by keeping

Humantoyes ^{4.}
mexicanus

the beam focused on him all the time, in spite of his efforts to escape. I was able to come right up to him. It was amusing to see him side-step in a jerky, nervous manner as he endeavored to get away from the beam; he only walked straight away from me once at the very beginning; one would think from this that perhaps the light excites birds' curiosities, for he ought to have been able to see well enough to run directly from the light. When caught he made no vocal sound, but flapped his wings violently.

5/6/31

Same bird; same place;
Photographed and released with
band no 439320.

[Birds near "entrance" to 2nd
Beto Camp (see Page 2). Both birds are
standing usually within 10-50 ft
of the nest when I observe them, and
vocalize in alarm note but I
never see them actually by the
nest. Eggs have been placed about
one nearly on edge of the nest, as

Photos
Band]

Xenotopus
mexicanus

5

though a mud hen or other animal, rushing past, had looked at it. I just saw several mudhens run past the nest as I came up this time.

The nest found by Miss Parichant (page 3) was found today to be deserted, although there were some birds in the vicinity. The nest was awash, with eggs very wet, and it looks as though high water were responsible.

5/8/31 Nest with 4 eggs found on barely dry mud at edge of floodland but 4 ft from water (unless if the water had receded a foot or so since the nest was laid). Nest is a depression lined with ~~the~~ stalks of dead weeds of a kind growing everywhere there. Parents are making no sound.

During today I saw a skiff taking a bath. In each case the bird squatted, ducked its head under, splashed its wings, raised its head (although still squatting) and repeated - in all 15 or more times. At the end of the bath it rose from its squatting position to its full height and its belly was thus seen to be clear of the water as usual.

Hirnantopus mexicanus

No, think not:

5/21/31

L.B.D.R

By 2nd Butte camp. ~~What I think~~
~~is the same pair that deserted early, when~~
~~I tried to take pictures, now has a second~~
~~nest about 20 ft away, and the bird~~
~~broods even when I drive past on the~~
~~road 25 ft away. I did not examine the~~
~~nest but left the dummy camera at~~
~~about 20 ft distance; the bird was~~
~~on the nest 10 min later, undisturbed.~~

5/22/31
5/23/31

~~Looked at above nest today: 4 eggs.~~

L.B.D.R. s. of Park Lake - for account
of nest 5 ft from *Recurvirostra* nest,
and record of photos see *Recurvirostra* 3-4.

5/24/31

4 lowlands just w. of 3 l-towers

1 nest, looked old, no eggs - on muddy island
well built up.

1 nest 1 egg

6/2/31 no sign of nest (although I marked
the spot) - the ground is all dried up (water level
lowered). There is a single (or dry) trail
about 3 ft away from the nest.

5/2

Nest mentioned under 5/21/31

hint of gradually moving up a
dummy camera - first installed
day before yesterday - one or two moves

1. 2 day I was able to day-

photo.

between main spally - to take
a picture. The bird was
quite shy, leaving the nest
whenever I got out of the car,
and remaining all away
from the nest every when I
would return (twice) at intervals

Hermonia
mexicana

of twenty and twenty five minutes -
At last, with the camera already
wet and another squall imminent,
I succeeded in taking a picture by
driving past the nest quickly -
a circumstance to which she was
used - and then driving out of
the car and yanking the 15 ft
(concealed) pull thread.

5/30/31 Same nest as above - there is
no sign of birds or nest and since
the water has risen and flooded
most of the area concerned I think
that this is the responsible factor.

5/31/31 What I really think is the first pair
which I tried to photograph (see page 6,
5/24/31 and preceding) now has a nest
with 4 eggs about 60 ft from the old
one and 20 ft from the road. The
incubating bird will walk of the
nest and run a few feet away when
I drive by. If I have not driven by
for several hours, or a day; but if
I drive by again within a half-hour
or so the bird will this time stay
on the nest so long as I do not stop
or get out of the car.

Later - by Salmon Slough overflow,



Himantopus mexicanus 8.

an empty - evidently used - nest found by Seth Benson. He located it first by observing the cries and agitations of the birds and then by noting the convergence of about 4 well defined pathways in the mud representing various - straight, or nearly so - avenues of approach to the nest among the short weeds. Probably these "avenues" were under water normally, but lowering of the level has dried the mud some what, leaving it able to hold imprints in the now exposed surface.

By their actions I thought the birds had young concealed in the long grass.

Pair nesting within a few feet of the insects (see *Recurvirostra* 4) - 3 young have hatched; one egg n.g. (Guess). The young were crouched down beside the sparse weeds, on the whitish dry mud, and blended quite well with their surroundings considering the thinness of the cover. They had been hatched at least 24 hrs and yet they were within 8 ft of the nest and some much closer. See *Circus* p. 24 for mention of still chasing & wailing hawk.

Himantopus mexicanus 9

6/4/30) See Agelaius 5 for account of blackbird
and then a stilt chasing a pair of cormorants.
Many stilts are rising and clamoring
and circling about, to light again
with half open wings fluttering in
distress, as the men with the trawlers
pass by a little marshy place - Even
when the fear for the safety of their
nest is upon them however, ~~they will~~
rival territory-owners will fight, and I
have just seen one stilt fly at and
drive away another when the latter
in its alarm happened to come
down beside it. Perhaps the nervous
state brought about by man's
intrusion only serves to heighten their
general nervous tension so that any
outlet is a relief and hence the fighting
at this time is an unthinking activity
serving as an outlet. I forgot
to write down yesterday that while
I was in a marsh I saw a stilt
crouch and flutter his wings in
"anguish" while actually in the
water, as a result, when he bent
down, his ~~was~~ breast belly, and
wing tips were submerged. I have
never seen stilts under normal

Hermitas
mexicanus

10

circumstances go into water to that point, always stopping short of wetting - except one when I saw one bathe.

The chasing of the ♂ Real took place again when it came flying in and wished to alight on the little channel in the midst of the slough, the bird would each time alight only to be attacked by the stilt and forced to take wing again; this happened about five times until the teal lit in the long grass. A minute later, hearing a low grating rattle continuously given, I saw this ♂ and another male engaged in a fight (= 1 chasing the other) fluttering above the grass, and then one of the birds took flight and went to another slough while the first one settled with the marsh-mare.

Later - over by another marsh 1/2 mile away there is a divi of stilts and another marshing the place where Mc Lellan is walking about, all at once the divi swells enormously in volume and the air is now filled with whirling excited birds -

Humanotus mexicanus"

all because M. Lellan is flopping his hat near the ground much as a wounded bird would flop, hence the agitation of the birds; it is a common ruse employed to get the birds excited, in this region.

P.M. The stilt even chased a ♂ spring, after he had got up; not before. Another, on the same, spring has been for a long time in that channel without being molested.

6/7/31 Little Penn. slough // Salmon Slough 2 adult young still in the down, about 7" long.

Flood lands by 3 l. river. Nest apparently of this species with a few fragments of shells in vicinity and general appearance of having ^{eggs} hatched and young near by hiding.

Young about 2 days old (3 1/2" long) found hiding in deep (for him, 6") water among some marsh grass stems. When I put him out in open water he swam better than young killdeer at the stage - apparently more aquatic. About 12 stilts congregated in a close flock, all shouting bloody murder, as he came ashore. They were too excited to do anything.

1

Hirundo erythrogaster

7/17/30

Road just south Los Banos Game Refuge S. boundary, Merced Co. Bridge 7 ft long by 3 1/2 feet high 5 swallows nests:

2 with eggs, 1 with 1/4 grown young, 2 empty, 1 on ground.

4/4/31

L.B.D. Refuge 4 seen by front gate; these are the first of the year.

6/3/31

L.B.D.R. Mud Slough west boundary. These swallows may build a mile or more from their nests in quest of prey at least, as instance by one which I watched as it sat on a fence wire in company with two others. It had a large (2 1/2" contour) dark (spring?) or possibly brown, feather in its bill, and presently rose and flew in a straight line, 50 ft. up, S.W. as far as I could watch it. I know of no barn swallow nests within a mile of here, nor is there a place for any.

Hylaecha guttata (dup).

4/29/31

Los Banos Duck Refuge, Los Banos, Merced Co. Calif. just across fence line east of Salmon Slough intake in dry grass. I was much surprised when driving by this open flat extending for acre upon acre away from the slough and covered with short dried up grass (6-7") to see a thrush start up, fly seven or eight feet and alight in the grass again. As I brought the X12 to bear I saw what I thought was another one just vanishing out of my line of vision. The bird I was watching stood for five minutes at this spot turning a little to one side or the other, so that I could make out the olive brown upper parts, ring around the eye, spotted throat and breast and at times through the deep grass the rusty red tail (the bird was about 40 ft away). At last upon my nearer approach it flew down into a little weed-filled drainage ditch, now dry, then out again on the far side and away over the fields. Salmon Slough was not closer than 100 yds at this point.

Hylaechia guttata (subsp.)² -

and I think never 200 yds.

Icterus bullocki

5/28/30.

Mud Slough, Los Banos Game Refuge,
Merced Co. Oriole nest with one egg, +
in cubating intermittently. Nest of *Tyrannus*
verticalis about 4 1/2 ft. away but no friction
apparent between them.

4/5/31

L.B.D. Refuge - Kaufmann Ranch, on
Mud Slough just n. of Refuge - one
heard in a willow.

1

Trido procne bicolor

- 3/15/31 Los Banos Duck Refuge, Los Banos,
Merced Co. Calif. 9:15 A.M. 4 or 5
birds circling in the air and contin-
ually flying very close to each other
with a twittering sound. At times a
pair would descend nearly to the
ground while fluttering thus, close
together and then when almost to
the earth would fly up again, one
zigzagging after the other, until
on gaining altitude they would
circle again and move apart. At
no time did I see them come actually
in contact with each other. Looks
like preliminary pairing reactions.
- 3/16/31 Main bridge over Mud Slough, L.B.
D. Refuge. Flock of about 50, mostly
resting and ~~some~~ preening on barbed
wire fence near the bridge. Every
few minutes two go through the actions
described under 3/15/31; it seems not to
be restricted to any two - as making
up a pair - for one will do it to
~~a particular~~ first one bird and then
another depending upon where he

Trichoprogne lincolni

happens to be on the wire.
Several times birds were observed
to cling to the fence post instead of
the wire, using their tails as
braces, with wings half extended,
seemingly to hang loosely.



3/21/31 L.B.D. Ref. 5:45 (Sun. eve), wind
blowing fairly hard. About 50 tree
swallows above the flats, a number
of them - about 20 - were ~~perched~~ perched
on the ground facing the wind. They
kept ~~up~~ rising and settling, those
which rose being replaced by others,
but did not seem to be feeding
merely "standing" in a fairly close
group on the ground.



970 *Anychus exilis*
(Least Bittern).

1.

5/23/31

Los Banos Duck Refuge, Los Banos,
Merced Co. Calif. Mud 5' high by
Poth Lake. One bird seen just for
an instant as it flushed from the dune
tubes.

Junco oreganus pinosus 1.

April 22, 1932 Alpine Creek Ranch (Ralp. Estate),
San Mateo Co., Calif. In road leading
up from main gate. As I was
picking flowers on the cut bank a
junco started out from a low
tangle of weeds on the bank side and
commenced to chirp ^{in a low} from a near by
tree. Looking under a drooping spray
of the weed I found the nest in a little
pocket in the nearly ~~vertical~~ ^{vertical} bank;
it contained 3 young about 15 days (no
downy covering as yet).

March 30, 1933. See under *Zonotrichia coronata*, p.
2, for list of stomachs and weights
which include this species.

Juncos are hopping about the
edges of the woods in pairs ab-
undantly now. They flirt their tails
and chirp to one another and are
tame and conspicuous. Must be the
courtship season. Testes much enlarged
(see *Zonotrichia*, p. 2)

7/22/30

Lanius ludovicianus gambeli
Los Banos Game Refuge, Merced Co. Calif.
Mad Slough. Three or four shrikes making
an incessant din and flying about the
adults being pursued by young of the year.
Must have nested in the willows along
Mad Slough. - Los Banos D. Refuge.

3/1/31

First willow on road leading n.
from bath tank etc. Los Banos D. Refuge.
Merced Co. Calif. Although there are as
yet no buds, but alone leaves, this
shrike's nest contained 7 eggs but
flushed, disappeared, and made no
demonstration

3/9/31

Los B. D. Refuge, Mad Slough. Two
nests of 6 eggs each found by Alden Miller.

3/26/31

Hauptmann's ranch n. of L. B. D. Ref.
Along Mad Slough: nest with
6 newly hatched young. I put two
of these into water to see if they
could swim, but the combination
of extreme infancy, a cold wind,
and very cold water was too much.
They made a few feeble motions
with wings and legs - not swimmer-
like thrusts, but number 1, 2, 3, 4
- but could not raise their

Lanius

2.

heads to the surface and become still in about 3-4 seconds.

3/28/31 L.B.D. Ref. Nest by Halls mentioned earlier. 4 young able to fly a little found perched among the outer branches of the tree; the nest was empty. By shaking them out of the tree I was able to catch them for they could only flutter a few yards on a line.

3/29/31 Same youngsters. Taken back to their

tree after being kept in camp overnight to await good photographic light. Their parents set up a strident cry while the youngsters crying for lack of food - were still inside the box in the car.

6/7/31

L.B.D.R. I think that the pair of shrikes involved in the preceding note, and also the pair out by the front gate, have both raised second broods for I now see young birds with short tails and wings flying weakly about when I drive by; they surely could not be the first brood youngsters, they are too weak on the wing and too short tailed. (See Alden Miller paper).

3 photos
u.g.

10/1/22

10/1/22

9/21/30.

Larus californicus

Los Banos Game Refuge, Merced Co. Calif.
Puth Lake - One bird seen nesting on the
water - plumage adult. (See also census)

Lanius

* Pomona, Calif.; Grand Avenue. * * *

1925 or
1924

Lanius ludovicianus gambeli - Note written from memory: Some time during the summer months (I recall the day dusty hot roadside well) about 1925 or 1924 I was standing at Pickenell's the real-estate man's front yard, beneath the trees, when I heard a commotion and looking out toward the road saw a shrike just as it came down to earth with a feebly fluttering house finch (don't recall the age of the house finch but think it was probably a young one). The shrike was pecking it violently and tumbling over it as it fluttered feebly in the dust. I don't recall what cries, if any, either bird made, nor am I certain whether the parents of the house finch (or companions) were calling in alarm but think they were. In a moment the shrike flew low over the ground with his victim (held in its feet ???) and disappeared. At any rate I am sure that the shrike attacked the bird and killed it.

* * * * *

Larus californicus

10/23/31 [At least I suppose the birds were of
this species, although I carelessly forgot
at the time to look carefully]. Aiken St.
at Grove, Berkeley, Calif. Light rain
falling - time - about noon. About
four of these birds observed in the heart
of the city here, fluttering about and
alighting for a moment, and then
again diving to circle in
narrow circles a few feet above the
pavement. The circle at this point
was just off the main street (Grove)
and alighted upon a ~~set~~ lot upon
which new but still untenanted houses
were going up. The nearest house
was about 750 ft away, with men
working on it, mostly inside.
The object of attraction to the birds
proved to be the remains of a
lunch, a banana peel, pieces of
food, fragments of paper bag,
etc. lying about in grass. I
coasted silently to within 50 ft
before the birds left, which they
did, hesitantly. Over aameda
on the cement school playground
which occupies a whole block on

Larus californicus. 2.

Van Buren Street I have often seen gulls flying about, and alighting, in a singular manner; I suppose it is the children's lunches there which attract the birds -

11/19/31

Cor. of Van Buren St., Alameda, and the street which passes by the school house. There is a little grocery store on the corner, with the school playground directly across the street, and this A.M. I saw about 5 gulls walking about in the gutters and on the side walk right beside the doorway leading into the store (there were no children present at the time). The gulls were picking up chunks of bread and such refuse from the children's lunches.

12/6/31
about.

Green lawn at triangular park-like piece by Lake Merritt, opposite the Grand Lake Theater, Oakland, Calif. Time about 11 A.M. Cold, rain coming down hard. I noticed a flock of about 75 gulls walking about here and there on the deserted lawn while the rain came down. They walked pretty fast -

almost a run at times - and yet most of the time they were not getting anything, for their heads were erect, scanning the surrounding grass. Every 30 or 40 steps, though, they did seem to ^{see} find something (insects??) and would run over to it and pick it up. Although some of them did this, when they were only 25 ft from the car, I could never make out what it was that they were getting, so small it was. Most interesting however was the excellent illustration of social awareness which the scene afforded. gulls kept circling down out of the air, continually to join their comrades on the grass, so that in the space of 10 minutes or less during which I watched them their numbers were augmented from about 75 to about 100. Apparently every gull which happened to circle over that end of the lake and which saw the congregation on the lawn immediately dropped down to join it. They were spaced out fairly well, perhaps two to every 8 foot square in the more congested places. I remarked no litching; competition was apparently

Larus californicus

84

not very keen because there was
food enough for all

February 8, 1932

Lake Merritt as above - conditions
the same, that is, a rainy afternoon, on
the lawns at the edge of the lake. As I
drove past I observed perhaps fifty
gulls which were just rising together
like a streamer of smoke, from
their feeding activities on the lawn.
They must have been hunting for
food in the same manner as noted
the previous time (see above).

Jan 15?, 1933

The base ball field (turf, or lawn) just
n.w. of the Life Sciences Building,
University of Calif. Same condition
as above. About 30 gulls present.
Angleworms are probably the food.

Larus delawarensis
~~*californicus*~~

— Ring-billed
Gull.

3/16/30.

About 3 mi S. of Tustin, on road to
San Diego, Calif. About 75 gulls on
grazed & plowed field, foraging. Two
of these identified by McLean as Ring-billed—
others may or may not have been.

Larus philadelphia

1.

Nov 28, 1931

Lake Merritt, Oakland, California. Several dozen Bonaparte gulls were seen at close range as they plunged into the water (after fish?) on all sides of our canoe. They were so tame as to ~~swim~~ ^{swim} on their diving activities unconcernedly at a distance, sometimes, of fifty feet, and often they would fly past our head at about 20 feet. Some were riding buoyantly upon the surface of the water as we drifted down upon them, and did not fly until we were some 25 feet away - and when they did it was ^{only} to commence fishing on all sides ^{of us}. Contrary to statement made by Hoffmann (Birds Pac. States, page 140) these gulls do dive energetically, and go clear out of sight. We (Ethel and I) watched the performance as it was executed many times about us, and were fortunate in having very favorable conditions for observations - in that the water was smooth, with a mirror like sheen from the western sky reflected from its surface, this sheen betraying the smallest disturbance and throwing into clear relief the smallest protruding object, such as


the tips of the emerging gulls wings. Accordingly, then, we could see the birds dive from a height of 8-10 feet, and disappear completely - there would be an interval just discernible between the splash of their descent and the re-appearance of first the tips of the primaries and then, with the rapidity of a cork, the emergence of the whole bird. The wings did not appear to have moved during the submersion of the bird. They were half folded, and raised some what above the birds head and body on the beginning of the plunge



and were in exactly the same position when the bird floated to the top. Picture of bird just emerging



When I say the birds dived from a height of 8-10 feet I am not entirely correct. They flew about at about that height, and hovered at that distance but in the descent which followed the hovering they usually descended some what closer, with a fluttering

motion, before finally pitching down into the water. The lightness and ease with which they rose from the water — a single flicker of long pinions and they were aloft and speeding away — was in marked contrast to the slow and comparatively labored wing beats of larger gulls under the same circumstances. I should think this ability to get under way easily and rapidly might have some survival value at times. ^{particularly} In marked contrast was this motion of theirs with that of three Forillon cormorants which were in the same place and which also wanted to get away. The cormorants however, chose to keep ahead of us by swimming rather than flying, as long as they could, and as we continued to gain, they manifested their uneasiness by their increased speed and the turning from side to side of their peculiarly tilted heads  (a habit of cormorants).

Finally, when forced to fly, they rose with a great splash and moved off

like ponderous projectiles of some sort, their painted wings beating with great rapidity, but the heavy body not being raised and lowered in the least by the wing strokes (arms are at the opposite extreme; their ^{small light} bodies fairly bounce up and down with each stroke of the powerful wings).

Getting back to the Bonaparte Gulls again; we saw several of them which were floating on the surface of the water, repeatedly dip the fore part of their bodies under the water and at the same time splash their wings, just as birds do when they bathe. . . . these must have been doing so too. The water is said to be brackish in Lake Mount (this was at the east end); I didn't dare taste for fear of God knows what kinds of bacteria. Some other gulls (*L. californicus*?) were very evidently bathing as they stood beneath the fresh water fountain at the feeding place for the birds (also at the east end), and let the water squirt over their backs and heads. They would chuck down in the shallow basin of the

Larus philadelphia

5

fountain, too and flut their wings
and waggle their tails.

Limnodromus griseus scelopaceus

Mud

10/4/30.

Overflowed land near Salmon Slough, Los Banos
G. Refuge. Merced Co. Calif. Flock of about
55 feeding in mud flat, accompanied by 9
Totanus. In flying, alighting, and feeding they move
very much as a unit.

3/21/31

Lt B. D. Refuge - small permanent slough
n. of Ruth Lake - scattered groups of
feeding birds - associated more or less with
avocets - totaling in all about 50.

Lalage labialis

9/7/30.

Los Banos Game Refuge, Merced Co. Mud Slough.
7 seen; very tame; would not fly more than
50 ft. even when stones thrown at them.

4/28/31

L.B.D. Refuge - Small pond by 2nd
Barto camp. Two individuals feeding
and sunning. Watched from about
5:30 until 8:50 (time of sunset).

6/3/31

L.B.D.R. Alkali seepage pond n. of
Ruth Lake 10 birds in full breeding
plumage.

